



THOMAS G. NEWMAN,
EDITOR.

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EDITORIAL BUZZINGS.

Let Fate do her Worst; there are relics of joy.

Bright dreams of the past, she cannot destroy;
They come in the night-time of sorrow and care,
And bring back the features that joy used to wear.
Like the vase, in which roses have once been distilled,
You may break—you may shatter the vase, if you will,
But the scent of the roses will hang round it still.

Do Not take the bees out of cellars until the advent of settled warm weather.

The Appeal on the one-piece section is now before the United States Supreme Court. It was argued on the 13th inst., and a decision may be now made any day, by the Court.

Paint your Hives just for the sake of appearance, to which it adds so much. It is best to paint them of light colors, so as not to reflect the sun's rays, and make it "too hot" on the inside.

The Review for April is out, and contains much that is interesting to the craft. In the advertisement on page 281, it was promised to be issued on March 20—it should have said April 20. It was an oversight of the printer.

Has any One yet received any of the Chapman Honey-Plant seed from the Commissioner of Agriculture? A. Fiddes, of Centralia, Ills., complains that he sent for some six weeks ago, and has heard nothing of it yet. Perhaps it is like a good many other things at Washington, very slow work to get matters straightened out. There "red tape" is the rule!

Mr. Z. A. Clark, of Arkadelphia, Ark., whose appeal from the persecutions of the Mayor comes up before the Supreme Court in July, is gradually gaining the "upper hand." The Mayor and councilmen were badly defeated in the late election, and Mr. Clark is now sustained by the majority.

The case is docketed for the Supreme Court, and will come off probably at "the time appointed," and witnesses are becoming more numerous in favor of Mr. Clark and his bees. He has a few colonies now in the city, and is unmolested in keeping them there. He contemplates making public exhibitions of bees at the schools, and manipulating them before the classes, and all this with the sanction of the new authorities. This shows that the "persecution" was done maliciously, and without cause. Mr. Clark thus speaks of some new witnesses he intends to use:

A gentleman drove a two-horse team by my apiary last summer, and drove through as large a single "swarm" of Italians as you probably ever saw, and was not molested in the least. (Will he not make a good witness for us?) I saw this with my own eyes.

Two young ladies who have lived by me since my residence here, and often in my apiary, say they were never stung by a bee in their lives! (How will they do for witnesses?) We have others equally as good.

Killing the Moth-Larvæ.—Mr. M. W. Hinkley, of Bowdoinham, Me., in the *Eastern Farmer*, says he has tried sulphur and failed, and thus describes his favorite method:

I have discovered that bee-combs infested with moth-larvæ can be perfectly and safely cleansed by immersing them for a few moments (until the cells are well filled), in a quite strong solution of potash, then quickly and carefully rinsing and drying. Care is necessary in the handling, as the potash has a tendency to soften the comb.

Spiders rarely cause any trouble with bees. Strong colonies are fully able to repel them, should they enter the hive. All webs about the entrance should be brushed away, or bees will be caught and devoured. Some mistake the work of the moth-worms for spider webs.—*Exchange*.

Why Should Bees make the honey dark by travelling over it? This is what a correspondent asks. Prof. Cook says that bees emit a sort of glutinous fluid from their feet, when walking over a plain surface, to help them adhere to it. This is what stains the white cappings, and makes them look dark and soiled.

Breeding.—In an item on page 259, Mr. Hutchinson was said to advise *feeding* for two months previous to the honey harvest. For the last word in the fifth line read *breeding* instead of "feeding," and the item will then correctly convey the views of Mr. Hutchinson.

Swarming Box.—The *American Agriculturist* for May contains the following on the use of a swarming box:

During the swarming season every beekeeper should provide himself with a "swarming box." This saves an immense amount of labor, besides obviating the damage often committed on valuable fruit trees and vines by cutting and mutilating them in order to detach swarms therefrom. This box may be made 10x14 inches, inside measurement. It should be perforated with many holes, $\frac{1}{4}$ or 1 inch in diameter; a pole 8 or 10 feet long should be fastened through the centre of the box, so that it may balance. After a swarm has pretty well settled on a branch of a tree, the box may be pushed up into the cluster of bees, when they will ordinarily take to it and occupy it. If they should not do so readily, the box, being open at one end, may be held under the swarm, when, by giving the limb a jar, a portion of the bees become dislodged into the box. The remainder will readily alight on the same, and all may be carried to the stand.

Storing Honey.—Mr. E. Israel, Oak Lawn, Miss., on April 11, 1888, says:

I send you some linden buds and leaves. My bees are storing honey in the sections, and working on white clover, which is in full bloom.

We have an abiding faith that the coming season will be a good one, and reports such as the above confirm our faith—promising prosperity for the bees, after many years of failure.

Strong Colonies to gather the harvest are very necessary. Mr. Dibbern, in the *Plowman*, remarks thus on this subject:

In regard to getting the best yield of choice honey, try to have all your colonies very strong when the honey-flow comes. This is best accomplished by feeding a thin syrup of honey each evening, commencing about six weeks before the expected yield. Give room in the sections as soon as needed to delay swarming as long as possible.

It Pays to be ahead of time in the matter of procuring hives, sections, foundation, etc.; when needed for use is too late to send for them—they should all be at hand then, waiting until wanted.

Feeding Bees in the morning is apt to induce them to commence robbing; feeding during the day is also dangerous during cold spells—for they sometimes become restless, fly out, chill and die.

Attention is Fixed on Germany. One veteran ruler, the Emperor William, has just passed away, and the grave is even now ready to receive his successor. The crown will rest on three heads in a single year. There are elements of deep interest in a reign like that of the Emperor William, whose life covered most of our stirring century. The story can be read in a finely illustrated article in *Frank Leslie's Popular Monthly* for May, which also gives an endless amount of interesting and attractive reading.

GLEAMS OF NEWS.

Honey by the Barrel, drawn from trees like maple syrup.—Mr. E. K. Dean, of America Union, N. Y., on April 11, 1888, wrote us as follows:

From time to time I read in the BEE JOURNAL the product of the pen of some who are foolish enough to think that whatever they may say about the "wonderful and mysterious honey-bee" everybody is bound to believe; and strange to say, a great many still continue to regard these industrious insects with the old-time wonder, and are perfectly ignorant of those "mysteries of the hive" (now so well understood by nearly or all subscribers of the BEE JOURNAL)—are ready to accept these fallacies with wonder and open-eyed amazement. I enclose a clipping from a Georgia paper, sent me by a friend, who evidently is astonished at its revelations. I also send his comments on the article, and think you will agree with me in thinking it strange that any one can for one moment credit the veracity of such preposterous statements. Here is his letter:

"This clipping from the Griffin, (Ga.) News, is unique in the annals of bee-culture. Of course honey is a natural product. If this account is verifiable, how do you account for it? Would it not be a good thing if a few of these trees could be grafted up here?"
S. S. LEWIS."

This is the clipping:

After dinner at Mr. Mitchell's we were sitting on his front piazza, smoking, and I discovered some bees going in and out of a knot in one of the large oak trees in front of his dwelling. This tree is known to be over a hundred years old. I learned that several years ago a swarm of bees assembled in that tree as their new home, and they have worked and lived there ever since. After they had been there for three years, the colony became very large and strong, and no attempt had ever been made to rob them of their honey. At last Mr. Mitchell came to the conclusion that the tree must be full of honey, from seeing large numbers of flies and bees around the root of the tree; so he set to work to devise some means to get the honey without cutting the tree down. After applying all the tests known to bee-men, he satisfied himself that the tree was full, and then decided to tap it like a fellow is tapped for dropsy. So he got a faucet and an augur and bored a hole in the tree near the root, and then screwed in the faucet, and to his surprise and great delight a solid stream of pure and elegant honey as clear as crystal gushed forth, and the supply seemed almost inexhaustible. It continued to pour out until he had filled six barrels; and he has drawn each year since that time from three to four barrels of pure strained honey from that old oak tree, and up to this there seems to be no signs of a failure of the supply, as the bees are still a very strong and healthy colony.

The same year that Mr. Mitchell tapped the old oak tree there was a new, thick growth sprung up all around the old oak, of an unusual appearance, having a smooth bark and thick, waxy leaves. One day he pulled off one of the leaves and put it in his mouth, and found it to be very sweet, and upon examining the place from which he had plucked the leaf, he discovered that the plant was bleeding or emitting from the wound a clear, thick-looking juice, which, upon tasting and examination, proved to be honey. He then commenced to nurse the new volunteer growth with the tenderest care and attention, looking after them daily; and as the summer advanced the plants continued to grow, and in the fall he selected and transplanted 300 of them in very rich

soil, 30 feet apart, and they grew very rapidly, making a beautiful display with their straight, smooth trunks, and their thick and glossy wax-like leaves. And the grove was seen and admired by all for miles and miles around. Mr. Mitchell's idea was that as large money was made from the sugar maple, by boiling the juice, he ought to make more from a tree that would run pure honey, and he was right. When the trees were four years old in the fall of the year, they were large enough to insert faucets. So he had 300 faucets made to order, and screwed them into the young trees, and the following spring the result was remarkable. Each tree yielded an average of 10 gallons of the richest golden honey; the following year each tree yielded an average of 20 gallons, and now the average is about a barrel to each tree during the year, and the grove continues to grow and flourish, and shows no signs of failing to supply a bountiful yield in the years to come. The quality of the honey is so fine, and the flavor is so delicate, that it always commands the highest prices, and the demand is greater than the supply.

This is only another proof that the "flashy" reporters for the daily press of the country draw heavily upon their imagination in order to cause a sensation, and get up "spley" articles for a credulous public.

All of the above sensational article is elaborated from the simple fact of some one finding a bee-tree in the woods, and taking from it some broken honey, unfit for the market, and mostly unfit for table use. The idea of drawing honey through a faucet from combs in a bee-tree!! The idea, even, is supremely ridiculous!

Bees and Grapes.—A correspondent from Middle Falls, N. Y., has sent us the following taken from the New York Sun of April 4, 1888. It is a question, and reply by the agricultural editor:

Can you suggest any means, besides bags, to protect grapes from the attacks of bees? The theory that bees do not attack sound grapes is a mistake. Half my crop was destroyed by bees last year.
WILLIAM N. NELSON, Millwood, Va.

ANSWER.—We do not know of any better way of protecting grapes from the attacks of honey-bees than by enclosing the bunches in paper bags. However, you might try spraying the vines with some liquid that would be offensive to the bees. Try a very weak solution of carbolic acid when you find the bees attacking the fruit. You are certainly right in your statements in regard to bees destroying sound grapes, and while entomologists know that bees will not only attack and destroy sound grapes, but also peaches, quinces, pears, apricots, and many other kinds of fruit, apiarists deny it, and endeavor to show that the bee cannot cut through the skin of such fruits, and that it is only after wasps and hornets have punctured the fruit that the bees attack it and suck out the juices. Langstroth, Quinby, Root, and other noted apiarists scout the idea of honey-bees cutting through the skin of grapes, while entomologists and thousands of practical fruit-growers know it to be a fact.

There is one side, however, of this question which is far too often overlooked, and that is the variability of the appetite or taste of the bees. One season the bees will attack various kinds of fruits, and daily gorge themselves with their juices as long as any can be found, and the very next season they may not touch fruit of any kind. Whether this variability is due to some peculiarity of the weather or season, we do not profess to know, but that the bees do take such freaks we have learned from ex-

perience. Next season you may not need any paper bags to protect your grapes from the attacks of bees.

Such "wiseacres" as the above editor, persist in asserting that bees attack sound fruit, when repeated assurances from entomologists and professors who have studied the anatomy of bees, and are thoroughly conversant with the subject, most positively deny that they are physically capable of doing so.

Out in California—such ignoramuses raised a howl about bees injuring grapes, and as a result, they sued a bee-keeper for damages, said to be done by his bees. This suit was carried to the Supreme Court, and the bees came out ahead. It was proven at the trial that the bees could not bite into the skin of a grape. A San Diego bee-keeper settled the question in this way, says the San Francisco Chronicle:

He took a perfect bunch of grapes, every berry of which was sound and in good order, and suspended it in the middle of a hive of bees for an indefinite time. It remained there several weeks, or perhaps months, and at the expiration of the period was removed in as perfect a condition as when first put in the hive. Thousands of bees had been crawling all over the fruit during that time, only too eager to attack the toothsome juice thereof, but had been unable to satisfy themselves.

Fruit men found that they had been fighting their best friends, and now have given up the persecutions of the innocent bees.

We might quote from scientists, professors, and others to prove that bees are incapable of damaging sound grapes—but of what use is it, when such scribblers as the Sun employs, make their bold assertions to the contrary. Verily, "Where ignorance is bliss, 'tis folly to be wise."

City and Country Life.—A correspondent in the British Bee Journal has this to say about the difference between life in a city and that in the country:

After our experience of the dense London fog up to noon on the 17th ult., the day after our annual meeting, when gas and electric lights failed to dispel the gloom, and choked almost to suffocation, pitying the gasping Londoners, while contrasting their state of existence with that of our own happy country fraternity, we exclaimed in fullness of heart,—

"We possess the flowers and trees,
Modern hives and golden bees:
Fruit and nectar, both divine,
We shall reap at harvest time"

And, finding on reaching our quiet country home, with its hive-scattered lawns and shrubberies, that the day had been one of brilliant sunshine, we were more than ever impressed with the truth of the old saying, "God made the country, man made the town."

New Catalogues for 1888 are on our desk, from the following persons:

Charles H. Smith, Pittsfield, Mass.—48 pages—Aplarian Supplies.

S. H. Stockman, East Auburn, Maine—24 pages—Bees, Queens, and Aplarian Supplies.

M. W. Shepherd, Rochester, O.—4 pages—Bees and Queens.

INTERROGATORIES.

[These questions were intended for the Query Department, but to save time and space, one reply is deemed sufficient, and is given by the Editor or some other member of that Department to whom he refers it:]

The Sections for a Beginner.—

L. wants to know the following:

What size of sections would you advise a beginner to use?

The most popular sections are those holding a single pound of honey.

Carniolan and Black Bees.—

J. B. A., of Stittville, N. Y., asks the following question:

Are Carniolan bees as good for all purposes as the common black bees?

Yes; and some think that they are even superior to the Italians.

Foul-Broody Hives & Frames.—

C. A. S., of Connecticut, propounds this question:

Can I have the hives and frames, where bees have had foul brood, cleaned so as to render them safe to use again? If so, how?

Perhaps so; but great care should be taken. Boil them in hot water. We should probably burn them all up. That would be safe.

Robber Bees.—

H. L. R., asks this question:

If a hive containing capped honey, but no bees, be placed on a stand during the spring, will it be molested by robber bees?

If the entrance is left open, it would be almost sure to be robbed. Such feeding is demoralizing.

Different Kinds of Foundation.—

J., of New York, desires the following answered:

1. Is foundation made with a Pelham mill just as good as that made with any other mill, everything else being the same?

2. Is it as acceptable to the bees?

Upon a test it has proven quite as good, and was as readily accepted by the bees.

Making Comb Foundation.—

C. W. desires information on the following questions:

1. What causes sheets of wax to crack on the dipping-boards, when the boards have been previously well soaked in water?

2. What will prevent it?

3. What is the best lubricator to prevent the sheets of wax from sticking to the rolls?

1. Either the wax is too hot, or the air too cold.

2. Avoid the above conditions, and have the boards sharp at the edges, so that the wax will first crack there.

3. Lye is the best lubricant.

Drawing Out Foundation.—

T. O. asks the following question:

Do bees draw the foundation out into cells?

Yes; and they often *thin* the base, to do so.

Arranging Sections in a Case.—

J. L. C., of Indiana, asks the following:

1. As there is only a half bee-space, or half an opening in each section, how shall I manage about putting in the first and last rows so that there will be room for the bees to get in and out of the sections next to the sides of the section-case?

2. Shall I put the sections up close to the sides of the case, or leave them away about 3-16 or $\frac{1}{4}$ of an inch?

3. If so, how is it done so that they will be secure in their places?

Use sections having $\frac{3}{8}$ inch openings instead of $\frac{1}{4}$ inch; then the half of that space at the sides will admit the bees. In the absence of sections with $\frac{3}{8}$ inch openings, if your "case" is wide enough, place at the sides wood separators 1-16 inch in width.

Free Trade and Honey.—

A correspondent from New York asks the following:

What is your opinion in regard to the effect of free trade (in this country) upon the price of honey?

It might work adversely at the start on low grades, but not so on the best quality. In our business we can compete with any country.

Separators and Moth-Worms.—

J. F. Gile, Basswood, Wis., on April 16, 1888, asks these questions:

1. Can I use sections without separators in the supers of the improved Langstroth-Simplicity hive? 2. Are separators necessary in the brood-chamber, if frames are provided with half or full sheets of foundation? 3. What shall I do with my comb honey in case it becomes infested with moth-worms?

1. Yes; if your super is arranged with reference to it.

2. Separators are not intended to be used with brood-frames. Wide frames holding 8 one-pound sections are sometimes placed at the sides of the brood-chamber; in such, separators are necessary.

3. Fumigate it, by putting it in a closed room, and burning sulphur in it. This will kill the moth-worms.

"When we Consider that pure honey is the very essence of flowers and plants, in which, we are told, there is a remedy for every disease, surely we cannot doubt the happy combination of honey as medicine. The Scripture tells us in many passages of the wonderful efficacy of honey as food and medicine. As the treatment of disease becomes more and more rational, so will the value of honey as a medicine become more and more apparent." So says the *Rural Canadian*.

Statistics.—

Mr. L. J. Stone, Littleton Common, Mass., on March 23, 1888, writes as follows:

As a volunteer to gather statistics on bees and honey, I offer my services for Middlesex county. There are not many bees kept here, but I have a team and can and will do the work carefully and thoroughly if desired. It seems to me that the only way that we can get correct statistics is to have some one interested to personally see the different bee-keepers, and fill out the blanks, and not leave or send blanks for them to fill out, for I think that in seven times (if not more) out of ten, they will not fill them out correctly if at all. If we could have two or three in each county to take statistics, we could go and see them with our teams well enough, in this part of the country. Of course if there was but one in a county, so we had to go around on the cars, we ought to have our expenses paid, but that would only be a little. I take the *AMERICAN BEE JOURNAL*, and I was never better satisfied with a dollar investment in my life.

At first we thought the best way to get the statistics would be through the assessors or Statistical Bureau of each State; but in all probability those gathered by persons interested in the pursuit, are of the most immediate value. We like the plan inaugurated by Mr. Root, in *Gleanings*, for that purpose; of which we gave a summary on page 243. Those obtained through the United States Statistician will go upon record, and be handed down to posterity in the history of the material resources of the country. We fear that they will not be gathered and published soon enough to be available to the producer in regulating the market prices, etc.

A correspondent from Ohio has sent us the regular statistical blank used in that State, and adds:

The assessors in this State are under oath and bond to ascertain the number of colonies of bees, and the number of pounds of honey produced, and I can tell in a few minutes the result in this State. I know what I am talking about, for I am assessor, and have been for the last three years. Of course the result is only approximate. In 1885 there were 79,580 colonies, and 818,060 pounds of honey; in 1886 there were 111,803 colonies, and 2,113,470 pounds of honey. With the proper effort we might get much information through the proper officers in the different States.

Frank Leslie's Sunday Magazine for May is a valuable and interesting number of this favorite family monthly. Both solid and light reading, grave and gay, prose and verse, are found in its pages, and the many beautiful illustrations add to the interest and value of the text. Dr. Talmage's sermon is a striking one on "Thirst in a Cavern," and there are many other good things in verse and prose, and a fine and vigorous hymn tune on the last page by C. Wenham Smith, to the hymn, "Crown Him with Many Crowns."

A Modern Bee-Farm, and its Economic Management; showing how bees may be cultivated as a means of livelihood; as a health-giving pursuit; and as a source of recreation to the busy man. By S. Simmins. For sale at this office. Price, \$1.

QUERIES REPLIES.

WHAT TO DO WITH ESCORT BEES.

Written for the American Bee Journal

Query 535.—What should I do with escort bees, when receiving a queen by mail?—Ohio.

Kill them.—C. C. MILLER.

Liberate them.—MRS. L. HARRISON.

You cannot use them to any account.—A. J. COOK.

I simply let them fly.—J. M. HAMBAUGH.

Let the poor things die. You cannot save them.—DADANT & SON.

Send them adrift to shift for themselves.—J. P. H. BROWN.

Let them shift for themselves. I have never succeeded in saving them.—M. MAHIN.

Liberate the bees in front of a queenless nucleus.—G. L. TINKER.

Let the bees go. It is always safer to introduce queens without escorts.—P. L. VIALLO.

If the shipping-cage is also one for introducing, like the "Peet" cage, leave them with the queen; at any rate, leave a few with her. My boy says, "Put the rest in a bird-cage."—A. B. MASON.

Open the cage and let them all go, and introduce the queen alone in the cage.—H. D. CUTTING.

Introduce them with the queen, or let them free, as so few bees are not worth the bothering with.—C. H. DIBBERN.

Anything except letting them fight with the bees of the colony to which you wish to introduce the queen.—R. L. TAYLOR.

Let them fly out of the cage and go where they will, before attempting to introduce the queen.—J. E. POND.

Open the cage on the inside of a window, and let the bees out; then cage the queen alone, or introduce her without her attendant bees.—EUGENE SECOR.

Always kill and bury every one of them. Should there be foul brood where the queen came from, you might, in this way, avoid getting it into your apiary.—JAMES HEDDON.

I used to just turn them loose to look out for themselves; but now I introduce them with the queen. I have experimented in this matter until I am perfectly satisfied that the workers can be introduced sooner than the queen can. I now rarely ever introduce a queen from my own apiary,

without taking a few bees with her.—G. W. DEMAREE.

If you have a queenless colony they may be given to it; otherwise they may as well be killed, for that is what any colony having a queen will do with them. It is not best to try to introduce them with the queen, for such a course often results in the loss of the queen.—G. M. DOOLITTLE.

If they are "*Apis dorsata*," send them to the AMERICAN BEE JOURNAL, in alcohol. If they are not, set them free, and let them take their chances. I have placed them caged with the queen in a colony of bees, and 72 hours afterward fixed the cage so that the bees of the colony could liberate them, and afterwards saw no sign of their untimely death. They are usually executed as intruders.—J. M. SHUCK.

It is safer to kill them—then there will be no danger of their communicating disease to your apiary.—THE EDITOR.

PACKING BEES ON SUMMER STANDS.

Written for the American Bee Journal

Query 536.—1. When bees are packed on the summer stands, is it necessary to put packing under the hive? 2. If so, how is it arranged? Please give details.—Michigan.

1. No.—R. L. TAYLOR.

1. No.—MRS. L. HARRISON.

We simply pack leaves, grass or straw under it, without further ado.—DADANT & SON.

1. No, but it is *best* to do so. 2. Make a double bottom and fill between.—A. B. MASON.

I think that packing under the hive is of but very little importance.—M. MAHIN.

I prefer to let the air pass under my hives to keep them dry.—G. W. DEMAREE.

It would certainly be better. Place the hives either on cut hay or chaff.—A. J. COOK.

The chaff-hive bee-men may have the space.—EUGENE SECOR.

After trying such packing I have concluded that it is not of enough benefit to pay for the trouble.—G. M. DOOLITTLE.

I have never put packing under the hives. I think that it is unnecessary.—J. M. HAMBAUGH.

It is not absolutely necessary, but it is best to pack under with straw or hay, if the hives can be kept dry.—J. P. H. BROWN.

Here in the South we let the bees remain on the summer stands without

any preparation whatever, all the year round.—P. L. VIALLO.

It is not absolutely necessary; but I think that it is a help to pack under the bottom-board with leaves.—H. D. CUTTING.

I do not think that packing under the hives is of any use unless it is to make a nice place for mice. What I understand by "under the hive," is under the bottom-board.—C. H. DIBBERN.

1. Yes. 2. If the hives rest near the ground, sawdust can be banked up against them, or leaves may be tucked beneath. I usually place my winter hives on a rim filled with sawdust.—G. L. TINKER.

1. I have never done so. I give 2 or 3 inches of space under the frames. I do not know that such packing will do any harm, but my bees winter well without it.—J. E. POND.

1. No, not if you have plenty of snow, and you do in our State. 2. The details of the arrangement varies according to the various methods of packing.—JAMES HEDDON.

I do not think that it is necessary, and I have tried it hundreds of times. As successful as I ever was in out-door wintering, was with a 6-inch hole in the bottom-board covered with wire-cloth immediately under the cluster. The wire-cloth was all there was between the bees and the weather. I had 4 inches of chaff at the sides and ends, and 6 inches of chaff on top. I risked my whole apiary of 40 colonies and lost none.—J. M. SHUCK.

It is neither necessary nor desirable. Snow would be better under the hives.—THE EDITOR.

INDUCING BEES TO BUILD COMBS IN CASES.

Written for the American Bee Journal

Query 537.—Could the bees be induced to build comb in surplus cases by placing them under or in front of the brood-chamber, where the bees would have to pass through in going to and from the hive; I mean for a short time, and then reversed.—Minnesota.

No.—DADANT & SON.

I can see no advantage in your doing so.—J. P. H. BROWN.

Yes, if they have no vacant room elsewhere.—C. C. MILLER.

Yes, sometimes, but not profitably.—R. L. TAYLOR.

Yes; but why not put them on top at once.—A. B. MASON.

It is utterly impractical for any and all purposes.—JAMES HEDDON.

Yes, they could be so induced, but I see no object in so doing.—G. M. DOOLITTLE.

Yes, but better results can be had by adjusting the cases over the brood-chamber.—G. W. DEMAREE.

I would consider it poor practice. Put your surplus cases where you expect them to remain.—MRS. L. HARRISON.

I have never tested this matter, but should go slow in adopting the plan.—J. E. POND.

This is quite a problem; fertile brains might put it in practical form. Who will try it? It might be so.—J. M. HAMBAUGH.

I do not know, but I should fear to try it on a large scale. If they did, would not the queen occupy them, and the combs be filled with pollen?—EUGENE SECOR.

From several trials I say no. Unless sections are placed right by the side or among the brood, they would better be above.—A. J. COOK.

I do not think that it would be of any help to you. Put them on top, where they belong.—H. D. CUTTING.

Yes, it may be done; but there will be a good chance for pollen in the sections. A better plan is, to invert the hive and put the sections over the brood-nest.—J. M. SHUCK.

I have had no experience in placing section-cases under the brood-chamber, or compelling the bees to pass through it in going from the hive. The natural place for bees to store surplus is over the brood-nest, as you can readily see by looking at a brood-comb.—C. H. DIBBURN.

I have tried that once with no success, therefore I cannot speak of it with much knowledge, but I do not believe that it will induce the building of comb. Contract the brood-nest, and move the frames closer together, and if honey is gathered, the bees will build comb on top as well as anywhere else.—P. L. VIALLO.

If the colony is strong, and there is honey to be gathered in sufficient quantity, the bees will occupy sections over the brood-frames, if one section filled with empty comb, or, what is better, partly filled with unsealed honey, be placed in the centre of each row of sections; otherwise they had better not build comb.—M. MAHIN.

When honey is coming in, bees will build comb either under or in front of the brood-chamber; but as they prefer to carry the surplus above the brood, I believe, as a rule, that is the best place to put the surplus cases.—G. L. TINKER.

Bees will build comb there if they can find no better places, but the system is undesirable and impracticable.—THE EDITOR.

CORRESPONDENCE.

SPRING.

Written for the Youth's Companion
BY WILLIAM H. HAYNE.

When birds are singing
On brush and tree,
And opening roses
Allure the bee,—
When grass is growing
In glade and glen,
And young leaves gladden
The lonely fen,—

When earth yields glimpses
Of hoarded grain,
And the sunshine glimmers
Through threads of rain,—
When dew is falling
On stalk and bud,
And fervid faneles
Invade the blood,—

When brooks are flowing
In music free,
And warm winds travel
Across the sea,
When earth beguiles us
With smile or tear,
We know with gladness
That Spring is here!

LARGE HIVES.

Large Combs and Strong Colonies Conducive to Strength.

Written for the American Bee Journal
BY J. M. HAMBAUGH.

On page 789, Mr. Buchanan, in speaking of 15 colonies of bees which he purchased from a neighbor in large box-hives, with many openings about them, says:

"Such powerful colonies I had never seen in April. I could but view them with astonishment. Curiously I asked myself this question: Of what use is our modern system of contraction, and careful expensive packing, if bees will winter in such splendid condition as they have in these old excuses for hives? What do we know?"

Mr. Buchanan has evidently noted the superiority of large, roomy hives and combs in the case spoken of, and now I will just state that not only have dozens of instances come under my own observations, where bees were occupying large, roomy hives with combs built according to their own liking, but with them in movable-frame hives of two patterns, namely, the Simplicity and Quinby, *a la* Dadant. The difference has been so marked, that there can be no possibility of a doubt in my mind, as to the superiority of large, roomy combs and hives, for out-door wintering, and consequent large yields of honey per colony.

Another point unquestionably is, that they are nearer a non-swarming

hive, than those of smaller patterns, and equally as capable of increase should it be desired.

In regard to my statement on page 804 of the AMERICAN BEE JOURNAL for 1887, that where bees are found in all kinds of hives and left to build their own combs, that the same principle that governs one, governs all, in the main, (namely, large, deep, roomy combs, with stores above, brood beneath, and combs spaced from 1½ to 2 inches from centre to centre), Mr. Cullinan remarks on page 39, as follows:

"Did he not find those combs of all shapes and sizes, made and shaped more with a view of filling the repository in which they were built, than to honor any whim or requirement of the queen-mother?"

Most certainly not, unless driven to it for the want of space. A cramped "repository" will necessitate crooked combs, but as a rule, where they are provided with large, roomy brood-chambers, combs will be built as before stated.

Mr. C. says: "The Quinby frame, which is the frame that Mr. Hambaugh alludes to, is too large and unwieldy for extracting, as well as slower of manipulations at all times." As Mr. Cullinan has never tried that which he condemns, we will let the public weigh the assertion for what it is worth.

I distinctly remember my first visit to Mr. Dadant's, and with all the arguments coupled with their long experience, failed to convince me that the "Quinby frame was too large and unwieldy, etc." Yet I never expressed myself so in print, but brought a frame of both brood-chamber and surplus department home with me, by which to make some hives, and satisfy my own mind. This was in the spring of 1883.

That spring I put 5 colonies on frames of this pattern, with only partial sheets of foundation. There was quite a marked difference in the strength of the colonies in the fall, during spanish-needle bloom, they filling their supers and brood-chambers from top to bottom; and with the same treatment, they came through the following winter much stronger in numbers, built up very rapidly in the spring, and having but a single tier of supers for each hive, they swarmed all around, and one of them sent out the second swarm. This began to make me open my eyes, and from that time on I began to pave the way to the use of the Quinby hive for extracting purposes, and the three subsequent years have more than confirmed my former convictions. Mr. C. should know that we are after the results first, and not so much the pleasure of handling. I quote the following from "Quinby's New Bee-Keeping," page 56:

"In 1874 I commenced with 100 colonies, and did not take any surplus honey until basswood blossomed—July 20. During the next 40 days I secured 10,000 pounds of surplus, and increased the colonies to 119, giving me an average of 100 pounds of surplus, from my old colonies."

In the spring of 1886 I had 33 colonies in Dadant hives; I extracted from their surplus departments on June 8. In just one week, or seven days, I ran over the same surplus departments and got from the 33 colonies 798 pounds of honey. On July 3 I got 1,238 pounds, a total of 2,036 pounds in 25 days, being an average of 81 11-25 pounds per colony. The gross product of the season of these 33 colonies was 3,992 pounds, or 121 pounds per colony, and this was obtained without a fall harvest, as it was almost an entire failure.

I had 49 colonies in all in this yard, and they increased to 56. The balance, or 16 colonies, were in 10-frame Simplicity hives, and they did not average as much by 15 pounds to the colony as those in the larger hives, notwithstanding the smallness of the number.

As regards my assertion, that we must imitate nature by making our hives after the style of *log gums*, etc., I will say that my article is written so plainly that a school-boy cannot fail to understand its meaning.

Now Mr. C. shows (by theory) how the horizontal bars and bee-spaces, instead of a detriment, become a benefit to the queen's functions as an egg-layer. He argues from the assumption that the queen is obliged to pass back and forth from each side of the comb, and concentrate her brood in the form of a ball or globe, with the instinct of concentration of heat for the protection of the brood. Very well; but let me ask if he ever observed frames of brood in March, of a colony in a normal condition. If so, will he not see 3 or 4 frames of brood probably 6 inches in diameter?

What would be the condition of this same amount of brood, were it placed in a single section of combs, *a la* Heddon? Would it not be spread more in the form of a pancake, than a globe? and would it be in a condition to get the concentration of heat from the cluster as it would in large combs?

Again, suppose two of the sectional bodies together, have an equal amount of brood in each, would it not be spread over more surface, on the two sets of combs, than on the one? Which would require the most bees in the cluster, to nurse and protect the same amount of brood, not taking into account the air-space that has to be filled in the centre of the cluster? A good queen can always keep her hive

stocked with eggs in the early part of the season, to the capacity of the colony to nurse and protect the same from cold, and the more unbroken and compact the cluster and brood, the more rapid will be the development of the same in early spring; and as the colony increases, so does the animal heat in the same ratio, and by the time we are in need of the queen's full power of egg-laying, which is from the middle of April to the middle of May in this latitude, the hive is so well stocked with bees, and cold snaps less frequent and severe, that the queen plys her vocation to the utmost capacity of her surroundings, with less regard for concentration of brood, and the consequence is, the better inside surroundings, to facilitate egg-laying, the stronger and more powerful will be our colonies; and, on the other hand, the more compartments into which the brood-chamber is divided, with the transverse bars, bee-spaces, etc., in the same ratio will we realize a loss, as the queen's time is taken up in passing from point to point.

In the face of these facts, wherein are the sectional brood-chambers an advantage in brood-rearing? I will challenge any bee-keeper to disprove the statement by actual test. We want facts—no fiction; and though some would try to make it appear that the prolificness of the queen is a minor consideration, I will state, that the hive best suited to the production of bees, is best suited to the production of honey, either comb or extracted, if the surplus receptacles are properly constructed and manipulated.

Mr. Hutchinson, in the *Review*, criticises my article on "Large vs. Small Combs," with an admission that, "In many instances, larger colonies are secured by using larger hives;" but continues, "What is gained? We simply have our bees and combs in fewer hives, and get larger yields per colony, but no larger per comb or per bee. Successful bee-keeping does not depend upon large yields per colony, but upon securing the greatest amount of honey, with the least expenditure of capital and labor."

Very good; and as the smoke has barely cleared away since the "wordy war" on small vs. large hives, in the *BEE JOURNAL* of 1885 and 1886, by Messrs. Heddon, Hutchinson, the Dadants and others, any thing that I might say would probably shed no more light upon the subject, than has already been given; yet I was tempted to investigate a little for myself, and here is the result:

Mr. H. says, "We simply have our bees and combs in fewer hives, and get larger yields per colony, but no larger per comb or per bee." Since

learning the above, I sent to a supply dealer for estimates on 8 and 10 frame hives, without inside furnishings, and I here quote his reply:

"Eight-frame hives would be worth just as much (as 10-frame hives), as we do not keep them stock. We would have to make them to order, and the extra trouble of making them would be worth all that we would save on the lumber." Now taking the regular catalogue-prices on 100 10-frame hives, with discount, would be \$61.75; this includes single bodies, platforms and covers. Now these 100 hives will hold 1,000 combs, and should we wish to put the same amount of combs into 8-frame hives, we would have to purchase 125 hives, which would cost us \$77.18; in other words, it would be nearly 6½ cents per comb for privileges in our 10-frame hives, and nearly 7½ cents per comb for privileges in the 8-frame hives. Or, it costs us 1½ cents more per comb to work our bees in 8-frame hives than it does to do so in 10-frame hives.

Now if we can harvest more honey per colony, as Mr. Hutchinson admits, in 10-frame hives, and it is more expensive to work the same amount of combs in 8-frame hives, where is the economy in "securing the greatest amount of honey with the least expenditure of capital and labor," with the 8-frame hives?

As regards the idea of "making our hives so small that an ordinary prolific queen could lay two eggs in each cell, and 'loaf' half the time at that," it is too ridiculous for comment; and as my former arguments cover this subject, we will await the verdict of a discriminating public.

Spring, Ills.

BEES IN SPRING.

Results in Wintering—Immense Country.

Written for the American Bee Journal

BY T. F. KINSEL.

I put my bees out of the cellar on April 3, and found brood in all the colonies except 1, which was queenless; 3 colonies died, 1 was queenless, 1 starved, and 1 had an abundance of buckwheat honey of fine quality, and yet it died. I would be glad to say what ailed it, but I do not know the cause; nor could I discover any material difference between it, and some of the living colonies. There was some mold throughout the entire lot, but not more in the dead colony with plenty of stores, than in others that were alive, and had brood. I have finally come to the conclusion that where human patients, in the prime life take sick

and die, under treatment of skillful physicians, we may expect some loss in bees.

There are some impossibilities in bee-keeping, as well as in other callings; for instance, there was no general yield of surplus last year, and the cause seems to make bee-keepers disagree. If I felt as confident of the "why" of the death of the above-mentioned colony, with plenty of stores, as of the honey dearth last year, I would not hesitate to make an assertion, though in doing so I could offer no known remedy.

Last fall, in placing the colonies in the cellar, 8 were found too light to winter safely. In February the cluster was separated and a frame of honey hung in, so that they could feed. These colonies were among the best when put out on April 3. I did the same last year, and experienced no bad results. Some had the diarrhea in the cellar, and smeared the hive front, and when put out all spotted everything that they could alight upon.

Since putting the bees out, I have examined every frame in each colony, spacing close, according to Mr. J. E. Pond's plan. I am convinced that warmth and close spacing are essential in quickly building up colonies in the spring.

I winter my bees with 8 frames in a 10-frame hive, occupying *all* the hive, and leaving more space *between* the combs in winter. I use the Langstroth frame in Simplicity hives. It may be more expensive to hang combs of honey in the hives for winter stores than syrup, yet the convenience is an item not to be overlooked, and so far it has been safe here.

Our country is immense, climate variable, and no man should lose his judgment and follow advice regardless of latitude. Think of it, "men of the North," who are now sowing oats and barley, our good Editor already has received a white clover blossom from "the Sunny South!"

Shiloh, O., April 9, 1888.

HISTORICAL.

Something on Sectional Hives used 30 Years Ago.

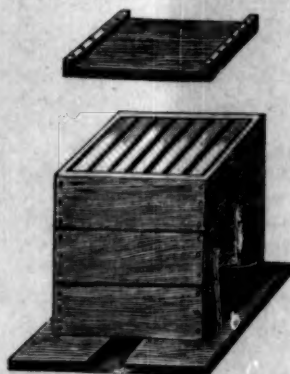
Written for the American Bee Journal
BY M. M. BALDRIDGE.

Under date of Feb. 25, 1888, Chas. Dadant sends me an extract copied from one of my letters dated Feb. 13, 1888, which I reproduce as follows:

"Who ever used a breeding-hive made of two half brood-chambers, and arranged so as to divide the brood-nest instantly into two equal parts horizontally, to be used separately or inter-

changeably, and for the purposes as set forth by friend Heddon? There is something here in manipulation, which the Heddon hive, combined with his instructions, enables us to do, that seems both *new* and *novel*."

Mr. D. then adds this to show me, I presume, that the *features* and *functions* of the Heddon hive are simply *old ideas*, to-wit: "Please look at the AMERICAN BEE JOURNAL for April 14, 1886, page 231; and, at the following



engravings, which were published 30 years ago."



To which I reply as follows:

The cuts you inclose, and which are given above, represent a sectional hive of three horizontal divisions, but I have no means of knowing from what they show, nor from what you say in the AMERICAN BEE JOURNAL to which you refer, the *purposes* for which the said hives are made. The brood-chamber of the new hive of Mr. Heddon is also made of two or more horizontal sections, but the best approved form of his hive is made of only two half brood-chambers filled with close-fitting and yet movable frames, and arranged and manipulated thus and so, throughout, for *special* and very important reasons.

I certainly infer that one of the sectional hives to which you direct my attention, is simply provided with *bars*; and, in the absence of any proof to the contrary, I assume the right to infer

that these hives were never used as Heddon uses his, nor were they intended for the same purposes. Hives made of two or more horizontal segments are by no means new to me, as I have seen a few of such hives in actual use, perhaps 25 or 30 years ago, but they were of no special practical value, and I presume none of them can now be found in use! But, notwithstanding that fact, I have never seen a breeding-hive made of simply two half brood-chambers, and for the special and very important reasons as set forth by Mr. Heddon; nor have I yet seen any evidence that any one else has ever seen or used such a hive prior to Heddon's description, and his instructions for using the same. The great trouble is, Heddon and other advocates of his hive, are not intelligently understood by the general reader, and perhaps never will be! But the same was and still is true in regard to what constitutes a Langstroth hive. There are in fact, to-day even, but few who intelligently understand the special features and functions which were the sole property of Mr. Langstroth, as covered by the re-issue of his patent.

My motto is, and always has been, "Honor to whom honor is due." I always try, however, to hold myself open to conviction, and when I am convinced that I have been in error, I will cheerfully admit it. All I want is simply the *truth*, no matter how, nor from whence it comes.

St. Charles, Ills.

SPRING WORK.

Some of the Things Necessary to be Done in Spring.

Written for the Western Flowerman
BY C. H. DIBBERN.

It is wonderful how much can be written and learned about the bees. Week after week and month after month, and one year after another, papers, journals, and magazines are printed, and great books are written, all devoted to this one subject, and yet it is not exhausted. Indeed, the more we see, hear and learn in this department of study, the more we are surprised at how little we really know. One would think in reading the bee-periodicals, there would be much repetition, and that they would become very dry reading, but it is not so. The AMERICAN BEE JOURNAL, and other bee-papers, are our most welcome visitors. We are always sure to find something new, if not rich and spicy in them, and they are seldom laid down till the last article is read. Then there is something to think about for days after, and nights, too. Some one

perhaps has suggested an idea, unintentionally, it may be, that not only sets us to thinking, but to experimenting in various directions.

The Bees' Sting.

To many, the bee is an "animal" only to be avoided, to throw stones at their hives, like a lot of boys would at a hornet's nest. Of course such people do not like bees, and the bees soon learn to make the matter mutual. Their only interest is in the honey, if they could only get it away from them. There's the rub, they are afraid of those horrid stings. Now why did an all-wise Creator provide the sting, for is it not said that He made nothing in vain? Is it not easy to understand that without this weapon of defense—and they perhaps never use it only in defense—the poor bees would have had a hard time of it all these years?

Ancient History of Bees.

Bees existed, perhaps, before man was created. Herman mentions them, and they are referred to often in the Bible. Indeed their product, honey, was the only sweet known for hundreds of years. They have co-existed with man from the earliest times, sometimes cared for, but more generally neglected or hunted like the wild beast. In our own times, who does not remember the brimstone pit, where, after a season of patient toil, the poor bees were needlessly slaughtered for a mess of honey, bee-bread, brood and old comb? But a better day has come for the bees as well as the bee-keeper. From the writings of such men as Huber, Quinby, and Langstroth, and the light shed broadcast over the land by our bee-papers, we have learned the better way. We no longer "rob" the bees, but by our care, knowledge, and kind treatment, manage them in such a way that they produce much more honey for us than formerly, and the bee-keeper not only leaves them an abundance for winter, but in times of scarcity provides them with the needed stores.

When we think of the great progress that has been made in the last quarter of a century, of all the books that have been written, the conventions that are held, and the papers that are published, we often wonder if the time will ever come when man will know all that can be learned about so simple a creature as the honey-bee. Will it be in a hundred years, or will it be when he has counted and named the last star that can be observed through the great Lick telescope?

Preparing Feed for Bees.

In studying over the losses that have been reported, we begin to fear that it was not the cold that killed them, but that they were thoughtlessly poisoned.

The honey crop last year was so poor that many colonies had not enough for winter, and feeding had to be resorted to. A good many had never fed anything to the bees before. The bee-papers came promptly to our aid with well written articles by some of the most successful apiarists, describing fully the kind of sugar to buy, in what proportion to mix it with water and cream-of-tartar, etc. They forgot one very important thing, however, that was to caution us not to boil it in copper or galvanized iron vessels, and let it stand in them. I came very near making this same mistake. I had boiled a batch of syrup, using cream-of-tartar, in a copper wash-boiler, and the next day noticed that the acid was acting on the copper. I then emptied it out, and made more to mix with it. I fed it all, and so far do not see any bad results from it. It shows, however, how careful we should be in preparing food for bees, as well as for ourselves.

Active Work—Winter Experiments.

Well, the active work of the apiary is once more upon us. The bees should be removed to their summer stands as soon this month as the weather becomes fine. If the weather continues stormy, do not be tempted to put them out, if in repositories, no matter if it is April. If put out at such a time, many will be lost by becoming chilled in their attempts to fly, and spring dwindling will surely result. If bees have been out all winter, they will remain in their hives, as they have had plenty of pleasant days to fly.

All colonies should be examined as early as practicable, and their condition and wants ascertained and supplied. If any are dead, the combs should be taken care of, and stored for use at swarming time, where the bees cannot get at them. If the combs contain any considerable honey they may be given to such as are short.

The colonies should be equalized, as to bees and honey, as far as possible, so as to give all a fair start. They should have all the sunshine possible, and do not be in a hurry about putting on honey sections. When there is honey coming in, and bees are beginning to get crowded is time enough. Of course much depends on latitude. In the South, they will be gathering honey freely this month, while at the North little can be expected.

It is much better to devote all our energies to induce the bees to breed up to strong colonies this month and next, to have them in extra good condition for the clover and linden harvest, than to vainly spend time giving them room they cannot occupy.

From experiments made this winter, our ideas of in-door wintering have undergone a slight change. Hereto-

fore it has been our aim to make the cellar as warm as possible. This winter more ventilation was given, and at no time since the bees were put in last November, has the temperature been above 45°. The consequence is that the bees have remained clustered and very quiet all the time, and very few bees have died on the floor. They have consumed only a small quantity of stores, and their present condition is the best for many years. April, however, is a critical month for such as are not well provided for, and a good deal of feeding will have to be done.

Milan, Ills.

BEE-LEGISLATION.

Selling the Right to the Nectar on Land.

Written for the American Bee Journal
BY W. J. WILLER.

Prof. A. J. Cook said at the Chicago convention, that when land is sold, the right to the nectar is not sold with it. Taking that for law, then it must be common property, and the people, as such owners, have a right to demand that it shall be gathered as economically as possible.

Let us look at the way in which it is gathered now. Supposing one-half is gathered by one-horse bee-keepers; they will get some bees to start with, and let them do as they like, the result is that each colony will cast from 3 to 5 swarms, thus using all the nectar to rear young bees, only to die from neglect. In this way the owners receive but very little honey in exchange for their nectar. The other half of the producers being experts, but little honey is wasted.

Why is it not as much the people's right to sell their nectar, as it is to sell their land? My plan would be to have it sold off in townships, on the same terms as school land is now sold, the bees to be kept two miles from the town lines, and the small producers to have the privilege of keeping bees until the owner of such territory has a stipulated number of colonies of bees.

The above plan would undoubtedly raise a disturbance at first, the same as actual settlers do with "squatters." Can any one tell how many bee-farms there would then be in the United States? One of the advantages of this plan would be, the ease with which the statistics could be gathered.

But "to err, is human," so the professor may be wrong; or, what is more probable, I may be wrong in my deductions.

Sandusky, Mich.

ARKANSAS.

Bee-Keeping in Southwestern
Arkansas—Bees Dying, etc.

Written for the American Bee Journal
BY R. M. RAWLINS.

Last year the honey crop was cut short by the drouth, the bees storing only about $\frac{1}{4}$ of a crop. Linden did not yield any honey, but the honey-flow up to May 15, was better than usual; after that the bees gathered but little surplus, in fact we did not take any after the rattan bloom in May. They had more honey than they really needed, unless it is in a late spring, such as we have sometimes.

Here bees are usually wintered on the summer stands, with the top stories on the hives. Bees do not freeze to death much, the greatest loss being from starvation, which occurs in March and April, after the hives are full of combs of brood and bees; when it is cold and rainy, if they have not plenty of honey, they have to be watched very closely and fed. With the movable-frame hive this can be attended to much better than with the box-hive, hence the loss is not so great now as formerly.

The principal honey plants are rattan, holly and linden (or "linn," as it is called here). The fall flowers are principally asters, but cotton yields some honey. Clover is not sown very much, but the farmers are increasing the acreage in this honey-plant. We are dependent upon the forests for the most of our honey, and they are being cut down and the land cultivated, so we will have to encourage the planting of clover more than ever.

The box-hive bee-keepers say that the bees do not produce as much honey now as they used to do. They surely do not for such bee-keepers; but the Italian bees, kept in movable-frame hives, average per colony about 40 pounds, on the hills; bees near the river-bottoms produce one-half more.

The Union and its Non-Supporters.

I think, as the editor has said, that among so many bee-keepers it is a shame that no more belong to the "Union." It is too bad for an honest industry to be trampled upon as has been done in Mr. Z. A. Clark's case, at Arkadelphia. Mr. Clark had invested a considerable sum of money in bees and fixtures, and had increased them to the number of colonies that he expected to keep (150 or 175 colonies), expecting to get a living from the bees.

Bees Dwindling and Dying.

Last spring, 5 colonies in 12-frame Simplicity hives, with top-stories on, strong in bees, and with plenty of

honey, commenced dwindling. The bees that work seem to die the worst. Their abdomens are somewhat swollen, they crawl out and try to fly, and when the affected ones do work, it is very easy to detect that they are sick. Some hop from the alighting-board, and lie flapping their wings until they die. Some are dragged out by the well bees, and some rest on the alighting-board, flapping their wings, and constantly kicking and rubbing their feet. About the same number of colonies are in a similar predicament this spring, but not all of the ones that were affected last year.

The best colony in the yard is one of the sick ones. I say "sick," but I do not know what is the trouble with them. It cannot be the diarrhea, and if they are poisoned, why are not more of them affected?

During the honey-flow last year, they gradually stopped dying, but the colonies became very weak before it ceased. Is there anything that bothers bees at night? It seems to me that they were troubled in that way. Can any one, judging from what I have described, tell what ails the bees, and how to cure them?

Okolona, Ark.

COLUMBUS, O.

The Bee and Honey Show at the
Centennial.

Written for the American Bee Journal
BY DR. A. B. MASON.

The following is the premium list for bees, honey, apiarian supplies, etc., for the Ohio Centennial Exposition to be held at Columbus, O., from Sept. 4 to Oct. 19, 1888.

No entry-fee will be required, and no charge made for space in this class, and all intending exhibitors in this class will be furnished with entry-blanks, rules, regulations, etc., free on application to me. Others desiring premium lists, etc., should apply to L. N. Bonham, Secretary, Columbus, O.

Exhibitors can begin arranging their exhibits on Aug. 21. Exhibitors' admission tickets, good during the Exposition, \$5.00. Competition and exhibition in this class, is confined to Ohio.

A building is to be erected for this Department, and it is very desirable to know at once how many will want space, and how much they will want for honey, and how much for other exhibits, so as to have the building of suitable dimensions; and I hope such as intend to make an exhibit will let me know immediately, what space they will need. Sometime since I made

such a request in *Gleanings*, and only two responded. At that rate no building will be needed, for a corner in some other building would do, and Ohio bee-keepers would have occasion to be ashamed of their lack of interest in this display of the State's material progress in this direction during a hundred years.

It is expected that the annual meeting of the North American Bee-Keepers' Society will be held in Columbus during the Exposition, and Ohio bee-keepers ought, and I trust will, have pride enough in the good name of their State, and in this industry, to make the grandest display ever made on this continent.

As shown below, there is a first, second, and third premium offered on most of the exhibits, or articles, and the total amount offered is over \$400, being the largest amount ever offered by any State.

Such exhibitors as do not desire to remain at the Exposition, can leave their exhibits in my care, and they will be looked after and cared for to the best of my ability, and without charge; and such as do not care to arrange their exhibits themselves (except for display of comb and extracted honey) can send their exhibits to me at Columbus, O., after Aug. 21, with all charges paid, and I will see that they are properly placed and cared for, without charge, and they can visit the Exposition at such time as will best suit their convenience, and find their exhibits all in place.

I am in hopes that we shall be able to have an apiary established on the grounds, and have public manipulation of the colonies by bee-keepers who may visit the Exposition. As the Exposition is intended to show the material advancement of Ohio in a hundred years, it will be "just the thing" to have on exhibition the most antiquated appliances, as well as the most modern, and to show also how bees used to be kept and honey obtained, and I hope those having old things of interest in bee-keeping whether they live in Ohio or not, will correspond with me with a view to having such things on exhibition.

The old "log gum," box-hive, and the straw hive, all with bees at work in them, will be among the attractions, "if it takes all summer" to get them. The cow-bells, tin horns, and tin pans that used "to make the bees alight," will recall to some "the days of childhood," and make them young again.

Here is the Premium List in the Apiarian Department:

Bees, Honey, and Apiarian Supplies.

A. B. Mason, AUBURNDALE, O., Superintendent.

All entries close Aug. 6. Anything competing for a single premium cannot be included in a display. Colonies must be

exhibited in such a shape as to be readily seen at least on two sides. Such provision will be made for the display of comb honey (and other articles that might be injured by bees), that it can be exhibited without crates. Everything must be in place by the morning of Sept. 4, 1888.

Best display of comb honey (largest and most attractive).....	\$25 00
Second best.....	20 00
Third best.....	15 00
Best display of extracted honey (largest and most attractive).....	25 00
Second best.....	20 00
Third best.....	15 00
Best sample of extracted honey, not less than 20 lbs., in best shape for retailing.....	5 00
Second best.....	4 00
Third best.....	3 00
Best sample of comb honey, not less than 20 lbs., in best shape for retailing.....	5 00
Second best.....	4 00
Third best.....	3 00
Best colony of bees, numerical strength and purity of race being competing points.....	10 00
Second best.....	8 00
Third best.....	6 00
Best race of bees, numerical strength and purity of race, the competing points.....	10 00
Second best.....	8 00
Third best.....	6 00
Best collection of honey-producing plants.....	15 00
Second best.....	10 00
Third best.....	5 00
Best display of beeswax.....	8 00
Second best.....	6 00
Third best.....	4 00
Best foundation for all.....	4 00
Second best.....	3 00
Third best.....	2 00
Best foundation press.....	6 00
Second best.....	5 00
Third best.....	4 00
Best foundation for a brood-chamber, made on the grounds.....	4 00
Second best.....	3 00
Third best.....	2 00
Best foundation for surplus, made on the grounds.....	4 00
Second best.....	3 00
Third best.....	2 00
Best foundation for surplus, sample of not less than 10 lbs.....	3 00
Second best.....	2 00
Third best.....	1 00
Best foundation for brood-chamber, sample of not less than 15 lbs.....	3 00
Second best.....	2 00
Third best.....	1 00
Best honey-cake, with recipe for making.....	3 00
Second best.....	2 00
Third best.....	1 00
Best honey-cookies, with recipe for making.....	3 00
Second best.....	2 00
Third best.....	1 00
Best honey-jambuns.....	3 00
Second best.....	2 00
Third best.....	1 00
Best honey-candles.....	5 00
Second best.....	3 00
Third best.....	2 00
Best honey vinegar, not less than 5 gals., displayed in glass.....	4 00
Second best.....	3 00
Third best.....	2 00
Best display of queens, in such shape as to be readily seen.....	4 00
Second best.....	3 00
Third best.....	2 00
Best honey-extractor.....	5 00
Second best.....	4 00
Third best.....	3 00
Best wax-extractor.....	3 00
Second best.....	2 00
Third best.....	1 00
Best beehive for all purposes.....	4 00
Second best.....	3 00
Third best.....	2 00
Best bee-hive exhibition.....	3 00
Second best.....	2 00
Third best.....	1 00
Best bee-smoker.....	3 00
Second best.....	2 00
Third best.....	1 00
Best arrangement for securing surplus honey.....	3 00
Second best.....	2 00
Third best.....	1 00
Best sections for comb honey, not less than 50.....	2 00
Second best.....	1 00
Third best.....	5 00
Best aparian supplies and fixtures.....	8 00
Second best.....	6 00
Third best.....	5 00

FOUNDATION.

Historical Description of the New Comb Foundation.

Written for the American Bee Journal

BY C. J. H. GRAVENHORST.

A bee-keeper of Thuringia, the homeland of Baron von Berlepsh, in Germany—a Mr. Koerbs in Bath Berka—has been successful in producing a new kind of comb foundation.

For a few years he had subjected his invention to a test, and found that it works very well.

A careful observation of the bees, suggested by a remark in the third and fourth edition of my book, "The Practical Bee-Keeper," prompted him to make experiments. His new foundation has the following advantages:

1. It is made of pure wax, by means of a hand-press, and it is not used by the queen for breeding, even if the foundation-combs are put in the brood-nest.

2. It is very durable, and the most delicate combs of such foundation will stand the employment of a full force in extracting the honey.

3. The honey is extracted very quickly, the operation scarcely requiring half the time that others take.

4. In bad seasons, these combs remain empty, not being used for breeding, and there being, unfortunately, no honey to collect.

5. The bees store no pollen there.

The separation of the honey compartment in the hive, from the brood-nest, becomes superfluous. As Mr. Koerbs told me this, I wrote to him, that he promised a good deal. Though I knew him as a successful bee-keeper, and fortunate inventor of a frame machine, I nevertheless was not oversanguine in regard to his latest invention. But as Mr. Koerbs offered to give me particulars of his invention, I gave him my word of honor not to divulge his secret. Full particulars were given me, and in addition I received one of Mr. Koerbs' combs of foundation, completed by the bees, from which the honey had been extracted several times.

The matter did appear to me to be very simple, and I thought that if this new invention should accomplish only half of what Mr. Koerbs expects it to do, we shall undoubtedly see a great revolution in the manufacture of comb foundation, as well as in bee-keeping.

Mr. Koerbs has sold the patent of his invention to Mr. Otto Schulz, a German manufacturer of foundation on a great scale, who now has, by his patent, the right to manufacture this new foundation in Germany and Austria, and no one in these countries has the permission to use the new combs, except after buying the comb foundation from Mr. Schulz.

I do not like patents in bee-keeping matters, and should have been very glad if another plan were carried out, to the benefit of both the inventor of the combs, and the bee-keepers of Germany and Austria.

In order to enable bee-keepers to manufacture their requirements of such combs for themselves, Mr. Koerbs has started a subscription to a pamphlet in which his experiments, and also

the manufacture of the foundation, and the method of using it are described. Any one who would agree to take this pamphlet at 25 cents, would, in due time, receive a copy, postpaid, in case Mr. Koerbs secured at least a few thousand subscribers. The pamphlet would be mailed to all subscribers on the same day. But only 350 subscribers had agreed to buy the pamphlet. Many of the German bee-keepers condemned this way, and pleaded for a patent. Mr. Koerbs applied for a patent, and then sold it to Otto Schulz.

And now comes the secret: The new comb foundation is one-sided, with prolonged honey-cells. One side of a frame is closed with a tin sheet, covered with wax and worked into foundation. The bees work out the cells to double the length, and fill them only with honey. Perhaps many bee-keepers have seen one-sided combs in hives full of honey, and many perhaps have had combs with prolonged cells on both sides of each comb, and have seen only honey in them. I do not doubt that a comb of such qualities as Mr. Koerbs claimed for his, would be of great benefit for every bee-keeper, if he only understands how to use it in the right way; and this way will be found out, I think, next season.

Wilsnack, Germany, March 12, 1888.

CONVENTION NOTICES.

The Darke County Union Bee-Keepers' Association will hold its annual meeting on Friday, April 27, 1888, at Ansonia, O. J. A. BOO, Sec.

The next meeting of the N. W. Ills. and S. W. Wis. Bee-Keepers' Association will be held in Rockton, Ills., May 22, 1888. D. A. FULLER, Sec.

The spring meeting of the Wisconsin Lake Shore Center Bee-Keepers' Association will be held on May 31, 1888, in Mueller's Hall, at Kiel, Wis. FERD. ZASTROW, Sec.

The Cortland Union Bee-Keepers' Association will hold its spring meeting on May 8, 1888, at Cortland, N. Y., at 10 a.m. All bee-keepers are invited. W. H. BRACH, Sec.

The Keystone Bee-Keepers' Association will hold its sixth annual meeting in the Court House at Scranton, Pa., on Tuesday, May 8, 1888, at 10 a.m. All bee-keepers are invited. A. A. DAVIS, Sec.

The annual meeting of the Western Bee-Keepers' Association will be held at Independence, Mo., at the Court House, on April 25, 1888. It will be carried on as a sociable, friendly gathering. Let all bring their baskets and have a good time. PETER OTTO, Sec.

The semi-annual meeting of the Progressive Bee-Keepers' Association will be held in the Sons of Temperance Hall at Bainbridge Centre, O., on Thursday, May 3, 1888. Parties wishing conveyance from Geauga-Lake Station, on the Erie railroad 3 miles distant, will please notify Mr. L. E. Brown, Bissell, Geauga Co., O., so that arrangements can be made for the same. All interested are invited. MISS DEMA BENNETT, Sec.

The next meeting of the Susquehanna County Bee-Keepers' Association will be held at New Milford, Pa., on May 5, 1888. The following subjects are to be considered: Bee-keeping for pleasure and profit—Spring work with bees—is it advisable to use foundation? If so, to what extent?—How can we make our Association of the most practical value to its members. All are cordially invited to come. H. M. SEELEY, Sec.

The tenth annual meeting of the Texas State Bee-Keepers' Association will be held at the bee-yards of Vice-President W. R. Graham, in Groesville, Hunt Co., Texas, on May 2 and 3, 1888. A leading feature of the convention will be criticism upon subjects that have been mentioned in the bee-papers. A good time is expected, so let all Texas and Arkansas bee-keepers attend. A cordial invitation is extended to all bee-keepers whoresover dispersed. Remember, no hotel bills to pay at our conventions! B. F. CARROLL, Sec.

CONVENTION DIRECTORY.

1888. *Time and Place of Meeting.*
 Apr. 27.—Darke County, at Ansonia, O.
 J. A. Roe, Sec., Union City, Ind.
 May 2, 3.—Texas State, at Greenville, Tex.
 B. F. Carroll, Sec., Blooming Grove, Tex.
 May 3.—Progressive, at Bainbridge Center, Ohio.
 Miss Dema Bennett, Sec., Bedford, O.
 May 5.—Susquehanna County, at New Milford, Pa.
 H. M. Seeley, Sec., Harford, Pa.
 May 7.—Welland County, at Welland, Ont.
 J. F. Dunn, Sec., Ridgeway, Ont.
 May 8.—Keystone, at Scranton, Pa.
 Arthur A. Davis, Sec., Clark's Green, Pa.
 May 8.—Cortland Union, at Cortland, N. Y.
 W. H. Beach, Sec., Cortland, N. Y.
 May 19.—Nashua, at Nashua, Iowa.
 H. L. House, Sec., Iowa, Iowa.
 May 22.—N. W. Ills. & S. W. Wis., at Rockton, Ills.
 D. A. Fuller, Sec., Cherry Valley, Ills.
 May 31.—Wis. Lake Shore Center, at Kiel, Wis.
 Ferd. Zastrow, Sec., Millhome, Wis.
 Aug. 14.—Colorado State, at Denver, Colo.
 J. M. Clark, Sec., Denver, Colo.

In order to have this table complete, Secretaries are requested to forward full particulars of time and place of future meetings.—Ed.

SELECTIONS FROM OUR LETTER BOX

Working on the Forest Bloom.

—T. M. Edwards, Kerrville, Tenn., on April 16, 1888, writes:

My bees are now booming on the great variety of forest trees that are now in bloom. The poplars will be in full bloom in a few days. My bees wintered well; out of 120 colonies only one starved to death, and 4 were queenless. There are no bees diseased in this country, and the prospects are fine. I had one swarm on April 14.

High Water in Iowa.—John B.

Lindle, Muscatine, Iowa, on April 16, 1888, writes:

I have had my share of trouble with high water. Over 100 head of cattle and horses, and over 60 sheep, and a lot of hogs are all on about 60 acres of dry land, the balance of my farm (consisting of 400 acres in all) being flooded with water. This changes all of my farming calculations. There is water in the cellar now. Cedar river is higher than any time since 1860. I have feed enough for my stock, but my poor bees suffer the most, as they are flying to the timber which is one-half mile distant, with one sheet of water for miles around on three sides of my place. The trees are budding, and also the willows. As the bees come in on the "home stretch" with pollen, they tire and chill with the cold wind, and drop by the hundreds to rise no more, then swept off by the current. It seems that one extreme follows another.

Experimenting with Bees.—John

Boerstler, Vashon, Wash. Ter., on April 6, 1888, writes:

Yesterday morning, about 10 o'clock, I noticed that the bees in hive No. 3, were not flying. I rapped on the hive, but I could not hear a sound; so I opened the hive, and there I found all the bees dead. I picked up the queen and layed her on the ground, and then I brushed all of the bees on the ground, but not a bee moved. I studied for five minutes what to do, and finally put all the bees and queen into a pall, and placed them near the stove in the house. What do you think they did? They began to move,

when I breathed on them, and after an hour's work they were all revived. I made syrup, and fed it to them in the combs, and a great many of them are flying again. I believe that I will yet save them from as close a call as I ever have known bees to have in my 20 years of bee-keeping. The bees are all right again to-day, and I think that they will do well by feeding them as I am doing.

Condition of the White Clover.

—Rev. M. Mahlin, Bluffton, Ind., on April 4, 1888, says:

My bees have wintered well. I lost 3 colonies out of 34. In this part of the country I think that the white clover is badly damaged. At New Castle, where my bees are, it does not seem to be much injured.

Wintering Bees in Idaho.—F. H.

McDonald, Star, Idaho, on April 10, 1888, writes:

The winters being usually mild here, bees, as a rule, are wintered on the summer stands, without any protection. The last winter being colder than usual, a few colonies froze to death, and others were made weak by the cold. On their first flight they daubed the hives considerably, but they soon became all right. The first pollen was gathered on Feb. 17. Colonies have built up fast, and are now strong.

Bees Not in Good Condition.—

Christian Weckesser, Marshallville, O., on April 16, 1888, says:

Bees are not in very good condition, generally, in this vicinity, and a very large percent have died. Cool winds are prevailing, and many bees will yet die, if not very well cared for. I notice that those colonies that were fed late in the fall, and "tinkered" with, are the worse for it, apparently. Those wintered in the cellar are rather the best, but most of them, though strong, had little brood when placed on the summer stands.

Good Outlook for the Bees.—B.

A. Manley, Milo, Iowa, on April 11, 1888, says:

March is gone, and April brings a good outlook for bees. My bees wintered in excellent condition. I packed them in corn-cob chaff from an elevator, which I will describe at some future time. Sometime ago it was thought that bees were wintering well in this section, but April reveals the fact that only the bees that were well cared for in the fall were able to get through. I hear of some losing all, and some having a small remnant left. But the thoughtful ones have no reason to complain. My bees are using this fine weather with all their might. I saw them carry in natural pollen on April 2. This is a good country for white clover, and it is starting up nicely.

Experience in Bee-Keeping.—

Jesse Willis & Son, St. Charles, Mich., on April 10, 1888, write:

Our experience with bees dates back 20 or 25 years, the first colony being taken from a bee-tree; since that time we have never been without bees. We have tried almost all kinds of hives—patented, moth-proof, and non-swarming—as claimed by the makers, and many other kinds, and we have come to the conclusion that the closed-end Quinby is preferable for our own use; but we find them somewhat unhandy when

shipping bees. We now have 250 colonies of hybrids. We winter them in chaff hives with fair success, and work exclusively for comb honey, which we find the most profitable. The most of our honey is shipped north, to Bay City, Saginaw, and other places, as our home market requires but little. We generally aim to get our crates and sections ready, and also the foundation fastened in the sections, before the honey-flow comes. Our greatest trouble has been in fastening foundation in sections, and we have been helped out of that with one of the latest foundation fasteners. Our best honey-flow is from white clover and basswood. The fall honey comes from wild rice and button-balls.

Colonies Need Building Up.—

Rev. John Hunt, Plain City, O., on April 11, 1888, writes:

Last fall I had 20 colonies of bees. Last season was a very poor one for honey. The white clover yielded nothing. I had no swarms, and no surplus honey—not even a supply for the bees themselves. Three colonies died during the winter, and the remainder are weak in numbers, though apparently in good condition, but will need building up greatly, to take advantage of the honey season, if it should be a good one. I have fed them on sugar syrup.

Bees Booming in Tennessee.—

John H. Christie, Dyersburg, Tenn., on April 9, 1888, says:

Bees are fairly booming. I do not think that I ever have seen them in as good condition at this time of the year as they are now. Some of my bees have begun work in the sections. I had a swarm on April 6. Peach and plum trees are through blooming, and pear, apple and cherry are now in full blast. Strawberry beds look white. I lost but one colony out of about 100 in wintering, and that starved to death for the want of honey.

Clamp for Wintering Bees.—

Justus Chapman, Woodville, Mich., on April 14, 1888, writes:

I started in the spring of 1887 with 2 colonies, having lost the balance of my bees during the previous winter. I increased them to 6 colonies, and took off 50 one-pound sections of white clover honey. The hives were heavy the last of October, when they were put into a clamp, a la Hutchinson, without cushions or division-boards, or other extras. They were taken out on April 9, and were all right excepting a slight diarrhea.

Heavy Loss in Bees—Alfalfa

Seed.—E. Jarvis, Fairgrove, Mich., on April 14, 1888, says:

There is, I think, a heavy loss of bees in this region, and many colonies have no honey left. We could not well double up colonies last fall, as there were many bees in each hive. I have 4 colonies left from 20. Some were in a shed, and some out in the wind. Two of those wintered outside are alive. My bees three years ago were hybrids, Cyprians and blacks. One queen mated with a yellow drone in 1887. Where can I get alfalfa or lucerne seed by the pound?

[It is worth 40 cents per pound by mail. It can be obtained at this office.—Ed.]

Scatter the Leaflets.—Look at the list (with prices) on the second page.

GLEAMS OF NEWS.

Comb Honey in 5c. Packages.

Mr. W. Harmer, of Manistee, Mich., has for three years been engaged in putting up comb honey in 2-ounce packages, and has sold several thousands of them. Mr. A. I. Root, editor of *Gleanings*, visited his apiary last December, and thus describes in that paper his method of making these small sections:

He takes a $\frac{1}{8}$ board, just long enough to slip inside of a Langstroth frame. Then with a jack-plane, set coarse, he scoops off the shavings. The shavings, of course, roll up; but he tumbles them into a pail of water; and when they get well soaked, they are straightened out, piled up and dried. This gives thin strips of veneer, and cheaper than you can imagine. He then fixes a board as in the second engraving. The Langstroth frame is slipped over this board.

I want to say, first, that these little blocks are made by gluing a $\frac{1}{8}$ board on top of a $\frac{1}{8}$ board, as you see. Now, with a circular saw, cut grooves clear through the thin board until the saw strikes the thick one. These grooves are of such a width that three of the afore-mentioned strips of veneer will drop into each groove, the strips running lengthwise of the frame. When this is done, three short pieces of veneer are dropped into the grooves crosswise. But to make these bits of wood stay in place when the frame is pulled up, a little glue is put into each corner, with a camel's-hair brush. You want to be careful, so the glue will not run in too far, and stick to the form. Before you put in the glue, however, drop some little squares of foundation into each little section. The glue should just catch each corner of the foundation. When the whole thing is dry, lift it off and hang it in the hive. When the little sections are full and sealed over, take frame and all to the grocer; slip off the outside, and show him that he can separate the squares into long strips. With a sharp knife he can now cut them up into little cakes as wanted. If a customer wants two, four, six, or eight, let him have them all in a slice, to save handling so many loose pieces.

The engravings were kindly furnished by Mr. Root from *Gleanings*, and this description by Mr. Harmer is also from the same source.

Getting small sections filled, never troubled me; for I knew that bees would fill spaces with comb honey that are a little more than a quarter of an inch, so that, with a good honey-flow, I was not afraid but that they would fill a 2-inch space. I would say just here, that I have had sections well filled, only $\frac{3}{4}$ of an inch square, so that, in this particular, I was all right; and I have proved to my satisfaction, and, I think, to the satisfaction of the few beekeepers who have called on me, that I have developed a practical system for making small sections out of shavings from a common hand-plane, and will suit any size of sections for less than 1 pound of honey, with the proper mold or form for adjusting them.

The reasons why I wanted them are, first, because I have seen comb honey cut in pieces, making it leak in every instance, often being a nuisance, daubing everything, causing considerable trouble, and making it difficult to give a customer, perhaps a boy or small child, a few cents' worth of comb honey; for every one has not 20 cents to spare to buy a whole section; and if they had, they do not always want so much. I think there are very few grocerymen who would cut a comb to suit such customers; and there are thousands of children around us that do not know the taste of comb honey on this account. I also thought that well-to-do people would buy them for the pur-



pose of putting one on each plate instead of serving or cutting into a large comb. These reasons have all been verified, for I have found such customers delighted in every instance. I have not had the opportunity of trying them at fairs, but I should think they would be just the thing, and would as readily bring 5 cents for a 2-ounce section as 4 ounces would on a piece of paper. That is what I sell them for, which is at the rate of 40 cents per pound, so that, in making these sections in the winter, you have profitable employment.

I can put hundreds together, and comb foundation in them in a day, ready for the honey-flow in summer. The size I have been making you will find by dividing a Langstroth brood-frame by 10 one way and 4 the other. The shavings for this size are $\frac{1}{8}$ of an inch wide, and 1- $\frac{3}{8}$ of an inch thick. I find this size, when filled, to weigh 2 ounces. I have just weighed 15 separately, which are on the work-bench, ready for market, and were not selected for uniformity of weight, and each one just balanced the scales at 2 ounces.

If these little cakes of comb honey can be put on sale in groceries, on the cars, at fairs, etc., they will prove a great boon not alone to honey-producers, but to humanity in general, by placing a pure sweet in small quantities within the reach of all.

Chaucer to Longfellow is the title of a new book just published by Johnson & Erskine, 107 Madison St., Chicago. This book contains 656 royal octavo pages, being a selection of lectures on English literature by the late Prof. John Fraser, a man of rare and scholarly attainments.

Among the great names of the period that come under review in the lectures are Chaucer, Surrey, Wyatt, Sidney, Raleigh, Spenser, Bacon, Shakespeare, Webster, Beaumont, Fletcher, Shelley, Ben Jonson, Milton, Burns, Hood, George Eliot, Mrs. Browning, Madame De Stael, the Bronte Sisters, Margaret Fuller, Mrs. Stowe and the Modern Novel, Tennyson, Longfellow, and Scotch poetry. Among all these great names there is no single one that the student of literature wants to miss, and nowhere will be found more concise and clear views of the true literary worth of each.

Prof. Fraser was an acknowledged master in literature. He combined scholarly abilities and culture, with a pure and popular

style. He instructs and conveys information in the most pleasing and interesting way. His lectures afford a rare opportunity at a trifling cost, of acquiring a knowledge of great men and their writings, which will become more and more in good society a mark of refinement, and a test of general accomplishment. Those who aspire to write gracefully and accurately, will find this book invaluable. Price, \$3.00. It can be obtained of the publishers.

INTERROGATORIES.

Colonies Close Together.—E. G. Haven, Belleville, Kans., on April 19, says:

I have 41 colonies of bees, and all appear to be doing well. Eighteen colonies were wintered in the cellar, and 23 colonies not on the summer stands, but were placed on a bench, close together, for the convenience of packing straw around them. They are all doing finely at present. 1. Will there be any harm in leaving them so close together during the summer? 2. If so, what would be the best way of getting them separated, without their going back and being lost? 3. Is there any way to prevent the bees from gathering around the watering-tank where cattle drink?

1. Place them further apart.
2. Move them a little at a time. Jarring and smoking aid in causing the bees to mark their location anew.
3. It will be very difficult to prevent the bees from watering where they now do, unless the place is dried up, compelling them to seek another.

Tight Hive Bottoms and Covers.—F. Roulo, Portville, N. Y., on April 23, 1888, says:

Last fall I put 99 colonies in the cellar, and 59 out-of-doors packed in chaff. Both lots seem to have wintered equally well. Bees in this vicinity have wintered comparatively well; but they are affected considerably with the diarrhea, which I think is caused by so much elder being made here last fall. I put my bees out on April 17, and after reducing 6 by doubling up, I have 152 colonies left. I would like to have this question answered: Are not bees too warm with a tight bottom and cover on the 8-frame Heddon-Langstroth hive, at a temperature of 45°? Mine seemed to need more ventilation.

No; thousands of colonies are every winter carried through in perfect health arranged just as you mention. It is not more ventilation which your bees need. Very likely they are becoming overloaded with fecal matter, which is not caused by too much or too little ventilation.

Honey Candy.—C. H. Drummond, of Winslow, Maine, says:

I should like to ask, through the AMERICAN BEE JOURNAL, if any one will tell how to make honey candy, or is it patented?

The methods are not patented, but so far we have not been able to get a formula for publication. When we do, such will appear in the BEE JOURNAL.

QUERIES & REPLIES.

Are the Zinc Queen-Excluders a Disadvantage?

Written for the American Bee Journal

Query 538.—Have you demonstrated in practice, that the zinc queen-excluder is a hindrance to the free passage of the bees from the brood-chamber to the supers? In other words, have you found any difference in the quantity of honey stored where such were used?—Mo.

No.—MRS. L. HARRISON.

No, to both questions.—A. B. MASON.

I never used a queen-excluder.—M. MAHIN.

I do not think that it is any hindrance.—A. J. COOK.

I have seen no difference in the amount of honey stored, by its use.—EUGENE SECOR.

I have not had experience enough to give a decided answer.—C. H. DIBBEN.

It has seemed to me that there was a difference, though I have not experimented largely in this direction.—J. M. HAMBAUGH.

I do not think that the zinc makes any difference in the amount of honey stored. If it does, I have not been able to discover it.—G. M. DOOLITTLE.

Summing up the advantages and disadvantages in its use, I find the latter over-balance the former; and I believe that I can get more honey when it is not used.—J. P. H. BROWN.

I have used the zinc queen-excluder so little that I cannot answer. The slat honey-board serves me for a queen-excluder.—C. C. MILLER.

I have demonstrated by the use of several hundred of them, and for three years, that they are not a hindrance.—JAMES HEDDON.

No. During the last season I had several colonies with queen-excluding honey-boards that stored more surplus than any colonies that did not have them; still I hardly think that the queen-excluder is to be credited with the difference.—R. L. TAYLOR.

I have tested zinc queen-excluders sufficiently to satisfy myself that they are a great advantage. I do not find that less stores are secured when they are used.—J. E. POND.

I have found no difference in the quantity of honey when using the perforated horizontal honey-boards. I have no doubt, however, that many persons fail to get the full benefit of the zinc excluders, for the want of the knowledge of the proper way to make and use them. There is practically no difference between the wood-and-zinc

horizontal honey-board, and those made out of plain sheets of zinc, if the latter are rightly made, and all the departments of the hive are rightly made and adjusted. The difference is one of cost only. The perforated excluder is a success.—G. W. DEMAREE.

The zinc queen-excluders are no hindrance to the bees.—THE EDITOR.

What and How to Feed Bees in the Spring.

Written for the American Bee Journal

Query 539.—1. When feeding bees in the spring, what kind of sugar is best for syrup? Should the syrup be thick or thin? 2. When an inside feeder is used, should it not be removed from the hive every morning, and left on only at night? Would it not raise a disturbance among the bees to leave it on during the day? 3. Should the feeder be removed from the hive for re-filling, or should the syrup be poured into the feeder without removing the latter?—New York.

1. Standard "C" sugar made into a thin syrup. 2. No. 3. Let it remain. The less you disturb a colony, the better.—MRS. L. HARRISON.

1. Coffee A or granulated sugar made into rather thin syrup. 2. No. 3. It depends upon circumstances, and the style of feeder used.—DADANT & SON.

1. Granulated. 2. I would not remove it. 3. I would not use a feeder that had to be removed every time you filled it.—J. P. H. BROWN.

1. Granulated or coffee sugar. I should use about 2 pounds of water to 1 pound of sugar. 2. No; not if your hive is bee-proof. 3. Fill the feeder without removing it.—R. L. TAYLOR.

1. Almost any kind will do, but I use either granulated or coffee A, and make it a little thinner than for winter feed. 2. No, to both questions. 3. I would not use a feeder that had to be removed to fill it.—A. B. MASON.

1. Granulated is best. I would make the syrup much thinner than for winter use. 2. No. It is best to leave it where you will want it again. 3. No. It will be empty. Pour the syrup into it while on the hive, and save all this extra work.—C. H. DIBBEN.

1. Granulated sugar, and tolerably thick, if much is needed. 2. Leave it on. 3. Pour it in the feeder on the hive. Beginners need to proceed with some caution about the whole business of feeding.—C. C. MILLER.

1. Honey is better than any sugar when bees can fly freely. Granulated sugar is the most apt to be pure. 2. No; it will be well to leave it on all the time. 3. A properly made feeder should not need to be removed to be filled, and no contact with the bees is necessary.—JAMES HEDDON.

1. The purest is the best, but a good article of C sugar is good enough. 2. No. It will make no disturbance. When bees become a little accustomed to being fed, it produces no excitement in the hive. 3. That depends upon whether the feeder can be filled without being removed.—M. MAHIN.

1. I have had limited experience. I should not be particular if the bees appeared to like it. I would have the syrup about the consistency of honey. 2. It would not be practical to remove the feeder, if you were feeding many colonies. 3. It ought to be refilled without disturbing the colony.—EUGENE SECOR.

1. Granulated sugar syrup; though any kind will answer for spring feeding. 2. No; not necessarily. Not at all if it is the right kind of a feeder. 3. That would be according to the kind of feeder that you are using. One of the Shuck pattern is my favorite, which does not necessitate removal.—J. M. HAMBAUGH.

1. It makes little difference, but I prefer granulated sugar at any time. I have it rather thin, and I like to have it a little warm. 2. I never move it at all, until done feeding for the season. 3. I would not like a feeder that had to be removed. I prefer to leave it in place, and to have it so made that we can feed without disturbing the bees at all.—A. J. COOK.

I use diluted honey, or sugar syrup of the best granulated sugar. I prefer it tolerably thin. I feed at night, only in quantity sufficient for the day's needs, and leave the feeder on. It causes no trouble with myself. 3. I pour the syrup directly into the feeder without removing it. I can see no reason for taking the extra trouble caused by removing to fill it.—J. E. POND.

1. At all times of the year I use granulated sugar for feeding bees, when I use any, which is not very often. However, for spring feeding, C sugar will answer all purposes, and is preferred by some. Thin syrup is best. 2. Leave it in all the time, but feed only what will be used during the night. 3. Pour in the feed without removing the feeder, as syrup will not harm the bees if they do not drown in it.—G. M. DOOLITTLE.

1. I prefer the best unrefined New Orleans sugar, flavored with honey; and coffee A as next choice. The former excites breeding best of all, when the weather is warm. Granulated sugar is a good winter food for old bees, but is nearly worthless for stimulative purposes, as nearly every element in the sugar is destroyed by poisonous acids. 2. Have the covers tight, and leave the feeders on the

hive till done feeding. A close-fitting hive with a contracted entrance precludes all robbing. 3. Just pour in the syrup while the feeder is in position on the hive.—G. W. DEMAREE.

1. For spring feeding the syrup should be thin. Make it of A sugar. 2. Leave the feeder in place, but give the bees only what is necessary. 3. Refill the feeder while on the hive, and save the trouble of removing it.—THE EDITOR.

CORRESPONDENCE.

MANIPULATION.

Easy and Profitable in Well-Adapted Hives.

Written for the American Bee Journal
BY REV. L. L. LANGSTROTH.

Although I was present at the Detroit Convention of bee-keepers in December, 1885, where Mr. Heddon first called attention to the system of management with his "new hive," I heard him too imperfectly to get any adequate conception of his invention. My head trouble returning soon after, and lasting nearly two years, I lost all interest in bee-matters, and it was only in February last (my attention being recalled to this hive), that I was impressed with the idea that it might be a great step in advance, in practical bee-keeping. From the very start I saw that many *abused* the power of manipulation given by the Langstroth hive, because they failed to see that progress lay in reducing the necessary manipulations to a minimum. In the latest work of our honored Dzierzon, his wonderful acquaintance with the habits of bees, seems, to Americans at least, to be greatly wasted upon a hive and system of management which would make our honey cost more than it would sell for.

To manipulate with whole cases of frames instead of by single frames, seemed to me a very wide extension of the principle so much insisted on in my first work on bees, published in 1853, that a hive ought not to require one single unnecessary motion either for the bee or its owner.

Influenced by such considerations, I determined to see the actual workings of the Heddon hive in his apiary at Dowagiac, Mich. As the weather on my arrival there was too cold to handle bees, I carefully studied the hive. From what I know of the habits of bees, and construction of hives, just as a short examination of a Munn hive shows me that it is worthless either for amateur or practical uses—so the longer I studied the Heddon hive, the stronger was my belief that it would accomplish what he claimed for it.

As soon as I could see bees handled in these hives, and could handle them myself, all my favorable prepossessions were fully confirmed, and knowing how little I could count upon the continuance of health, I felt that in justice to the public, as well as to Mr. Heddon, I ought to put this opinion on record, by writing to some of my bee-keeping friends.

I think that no one who knows how I was deprived of the legitimate fruits of my own invention, will be surprised that I should feel it to be a *positive duty* to use what influence I may have among bee-keepers, to secure for Mr. Heddon both the

honor and the profit to which he seems, not only to me, but to so many of our best apiarists at home and abroad, to be justly entitled.

Sum Critique—"TO EACH HIS OWN."

From my earliest recollections my dear father enjoined this as a sacred duty upon his children—and I believe that all who know what I have done and written in connection with bees, will bear me witness that I have not departed from the spirit of his teachings. It was this strong sense of duty to give honor to whom honor is due, which made me desire, even before I had any correspondence with Mr. H. about his hive, to go to Dowagiac and judge of it for myself. I will now describe some of the most important things that I there witnessed:

1. Before I saw the easy working of his frames (even in hives which had been occupied for several years by bees), with close-fitting uprights (I prefer this French term to our word, ends), I could not conceive how they could possibly be handled as rapidly or safely as the Langstroth frames. The propolis trouble alone seemed to forbid this. Judge of my surprise then to find, that by leaving no space for bees to get between the uprights and the cases holding the frames, and by keeping the touching surfaces of the uprights so closely pressed together by the thumb-screws, as to leave no joint open wide enough for bee-glue, he had actually reduced the propolizing propensity of bees to a minimum!

My knowledge of the trouble and delay in manipulating all the previous styles of close-fitting uprights, led me to think that it would be quite difficult to handle the Heddon frames. To find that I was mistaken on this point, was a greater surprise than the way in which the propolis difficulty was met. In handling Langstroth frames of the standard depth (and still more with deeper frames), bees are often hurt between the uprights and case—a thing impossible with the Heddon arrangement, while at the same time the uprights of his case—as they go down into the hive, when a frame is put back—only *push* the bees away instead of pinching them between their closing surfaces. When the Langstroth frames are put back, even by experts, it often happens that they must re-adjust the spacing, to get room for the last frame, whereas, the Heddon frames always go to their proper places. As a matter of fact then, the Heddon frames can be safely handled with more rapidity than any in previous use; thus securing all the advantages of close-fitting uprights without their old inconveniences.

2. I was actually charmed to see how quickly the queen can be found in this hive. There is really no place where she can hide behind either the uprights of the frames, or on any of the frame pieces, or on the combs, which by a single inversion of their containing case, have all been made to completely fill the frames. Alarmed, now, by the introduction of both light and smoke into such a shallow case, she usually glides at once to the bottom-board to hide herself between it and the bottoms of the frames. If she does not show up when the case is lifted off, she can, as I have seen, be readily shaken out from such shallow and uniformly straight combs, so as to be easily secured.

To catch a queen with so little trouble, and with no danger of robbing, seems almost too good a thing to be believed, until it is actually witnessed, and the mere thought that such a feat is possible, must recall to many of my readers their weary queen-hunts, in the old styles of hives, under the broiling sun, and with the hateful annoyance of robber bees.

3. Another important feature in this hive is the remarkable rapidity with which the exact condition of affairs, in the brood-chamber, can be ascertained. In less time than is needed to remove and replace a single frame in other hives, a Heddon brood-section can be lifted off, and from its being

shallow enough to allow a good view of the combs from both above and below, even without shaking out the bees—the quantity of brood and honey, and everything else essential to be known, having been learned by a few glances of an expert's eye—the section may be replaced before any robbing can be done.

4. The shape, size and lightness of the parts composing this hive, greatly facilitate all necessary manipulations in the apiary, and must therefore make it peculiarly acceptable to all who for any reason wish to economize their physical strength. A weak person who cannot handle many hives needs it, and the strong man also needs it, that he may make all his strength tell, in the management of the largest possible number of colonies.

5. The simple way of holding the frames so firmly in place by thumb-screws, admirably fits this hive for safe transport. I use the word *transport* in its widest sense, so as to include every movement of any of the parts of the hive, from the simple lifting off of a section, to the carrying of a hive with bees for any purpose, to any distance, however short or long. I have seen a frame filled with comb, tossed about the room, and thrown out of a second story window—also a whole section of such frames slid, and even kicked about a room, and all without any injury to the combs.

6. I am strongly impressed with the great advantages, which seem to me must certainly be gained by one of the leading features of Mr. Heddon's invention and system of management, viz: the *divisible brood-chamber*—but as this is a point on which the season (April 17) gives me no opportunity to speak from actual observation, I relegate it to the many able bee-keepers who can speak from their own experience, remarking only that when capacious brood-chambers and surplus apartments are desired for any purpose, they can all be readily obtained in the best form, by the Heddon hive and system.

7. Perhaps there was no feature in the Heddon hive which surprised me quite as much as the facility it affords for the use of the extractor. Indeed, when I first gave it my attention, I was so ignorant of its scope, as to suppose that it was a conceded point that it could only be used profitably for the production of comb honey! This is one of the points where I cannot speak from my own actual observation; but those in Dowagiac, who have had the largest experience, affirm confidently, that, in a given time, they can actually extract more honey by the Heddon system than they could with their Langstroth hives, and give these reasons for their belief:

Nearly all the bees can be easily shaken out of the combs of the extracting sections, and these quickly carried to a safe place, where the few bees not shaken out, will soon leave them. The eight frames of a section may then be turned out in a standing position upon a table, by a single motion, their regular shallow combs uncapped with unusual rapidity, and all their contents extracted at the same time; and nearly all of this work can be done *under cover*. Need anything more be said on this subject, to those who have followed the tedious routine of shaking and brushing off the bees from each separate comb in the sun, and exposed to robber bees?

8. It need hardly be said to any good bee-keeper, who has carefully weighed the above points in favor of the Heddon hive and system of management, how greatly it reduces in an apiary the liability of robbing. Those who have the Heddon hives will have no use for any bee-tent, when they can so easily find the queen, or can shake out the bees from any section when necessary, to examine it at leisure under cover.

In reading this enumeration of benefits to be had from Mr. Heddon's invention, it might seem that if I have not exaggerated them, any one of a number of them must be

worth, to a person who handles many colonies, at least the price of an individual right to use his patent.

I can only say that I have sought to avoid all over-statements, and have, in addition to what I could see with my own eyes, questioned at much length some who have largely handled the Heddon hives, and have been from the beginning familiar with every step in the progress of his invention. I would therefore not be afraid to risk my reputation for sound judgment as to the great value of the forward step which he has taken, even if I did not know that my opinion accords so well with the experience of many who have had the opportunity to put the hive and system to the test of practical use.

It is proper that I should say before closing this article, that I have carefully examined the claims of the Heddon patent, and the reasons which have been thought by some to invalidate them. Neither my acquaintance with the literature of bee-keeping, nor my familiarity with our patent laws, nor any facts which have been alleged against the Heddon patent, lead me for a moment to question its validity.

History seems often to repeat itself. In my own day, how often it was declared to be enough to invalidate the claims of the first person who had invented a hive, which commended itself at once to those most largely engaged in the production of honey—how often, I say, it was thought enough, to show that some one before me, had used a frame in a bee-hive. It mattered nothing that I never claimed to have been the first to invent a movable-frame—that my frame and way of using it were fully described, and that the few frames which antedated mine were of no practical account—still the attempt was for many years persisted in (I sometimes shudder now at the bare recollection of those weary years), to persuade the bee-keeping public that my patent was invalid.

On all sides patents sprung up, using, BUT NOT CLAIMING the most valuable features of my invention, and one bee-paper, having then the largest circulation, went so far as to accuse me of perjuries, which, if committed, ought to have sent me, in my old age, to the penitentiary. Thus were the feelings of my wife and children outraged, and even where no credit was given to such atrocious accusations, many honest bee-keepers were so misled as to believe that they had a perfect right to the free use of my movable frames, or were induced to pay for infringing patents the money which would have provided amply for me and mine.

I do not think that the bee-keepers of this country will ever suffer a similar outrage to be perpetrated either against Mr. Heddon or any other honest inventor and benefactor.

928 Steele Ave., Dayton, Ohio.

BEES AND FLOWERS.

Benefits of Bees to Agriculture and Horticulture.

Read at the Fremont, Mich., Convention

BY GEO. E. HILTON.

From the very "pointed" argument used by the bee in self-defense, either real or imaginary, the masses believe that the sole occupation of the bee is to sting; and we often hear the remark that, "a bee will go ten rods out of its way, any time, to sting me."

Let us see if this be true. The bee, is never more happy than when hard at work, and at a time when honey is coming in rapidly. There is nothing

stingy about them. At that time of the season I have taken from the hives hundreds of pounds of honey without the least protection of either smoke, veil or gloves.

Why is nectar placed in the flower or blossom? Is it necessary for the setting and maturing of the fruit? The scientific horticulturist says, No! Was it placed there for the bee? Again the scientist says, No! Then let us examine the mysterious construction of the blossom, and see if we can solve the problem.

The blossoms are composed of one or more leaves called petals. The base of this is called the corolla, and there, as a rule, nectar is deposited. The stamens or pollen-bearing stems—in other words, the male organs of the plant—protrude beyond this nectar, and in order for the bee to secure this much coveted sweet she must brush by these stamens, and to a greater or less extent the pollen adheres to the legs and body of the bee. It no sooner drains the cup that Nature has filled for a two-fold purpose, than it hies away to another, and here is where the wise economy of Nature is being performed. The bee in coming in contact with this second blossom, mingles the pollen of the two, impregnation takes place, and all fruits and vines are made to bring forth fruit, "each after its own kind." If any doubt this assertion, next spring when your fruits, vines and clovers blossom, just before they open, with a bag having the meshes small enough to exclude insects, see how much fruit and seed you get from the blossoms thus treated.

In the West, in some sections where the bee and hornet do not exist, they fail to raise pumpkins, for the want of something to fertilize the blossoms. In some of the mid-ocean islands they could not raise red clover seed until they imported bumble bees to impregnate the blossoms. Now the Italian bee is aiding in this grand work.

The bee is the friend of horticulturists and agriculturists, and as there is no insect that increases in such vast numbers so early in the spring when their services are so much needed, they are of more value to the farmer, gardener and fruit-grower than all other insects.

A man near Boston makes a business of raising cucumbers for the winter markets. I am informed that he has several acres under glass, and until within the past few years he did all the fertilizing by hand. This was a most tedious and expensive piece of work, reducing the profits to a minimum. But now in each section of this vast winter garden, he has a colony of bees, and while the mercury is sporting with zero outside, these little helpers are gathering honey from cucumber blossoms, and at the same time doing the work of many hands; and one great advantage is, that they do their work so much better. The proprietor says that by the old method they never succeeded in fertilizing over 50 per cent. of the blossoms, but that the bees fertilize at least 80 per cent, thus advancing his industry from a basis hardly paying expenses, to one that is profitable.

I might dwell for hours upon things connected with this very interesting pursuit, but I will not tire you, for what may seem interesting to me may be idle talk to you; but let us learn a lesson from the bees to do all the good we can in this life. The bee that gathers the nectar from and fertilizes the blossoms, never lives to consume the honey stored for the winter months; but toils on uncomplainingly, and if the season be favorable it not only stores sufficient for the winter's supply, but a surplus sufficient to compensate the bee-keepers for the attention given during the summer months besides, and giving us the only pure sweet known to the civilized world.

Fremont, Mich.

EKE HIVES.

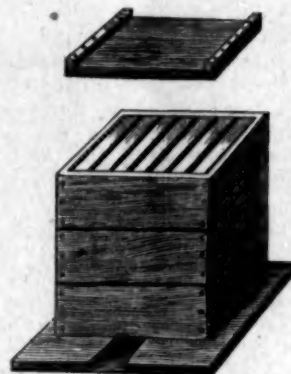
What they are, and What they are Used for.

Written for the American Bee Journal
BY CHAS. DADANT.

Although my description of eke hives on page 199, seemed to me very plain, the editor advised his readers to see comments on page 197, where he says:

"An 'eke' is a small additional story (generally a half story) placed under a hive to add to its capacity." And further: "These ekes and nadirs bear no relation to a brood-chamber that is divisible, and should not be confounded therewith."

To show that a hive raised with an eke is not an "eke hive," and that



eke hives were formed of divisible brood-chambers, as I described them, I send engravings of divisible brood-chambers; of which we have procured the electrotypes, with many others representing hives of the old country, which will appear in the new book, "Langstroth revised." One engraving shows a square hive formed of three ekes. The hive has 7 combs, and cannot hold more than a hive with seven Langstroth frames. Then the three ekes are about of sufficient capacity to satisfy partisans of small hives.

If this is not convincing, I will refer to the *AMERICAN BEE JOURNAL* for 1866, page 72, in an article written by our lamented Samuel Wagner: "All these sections or ekes are of equal size, without bottoms, and with an opening 6 inches square in the top. The bees, thus provided... will usually fill two or more such sections with combs, brood, and honey." On page 85: "The mode of dividing stocks [to make artificial swarms] by severing one or more ekes or sections from a hive, should be condemned and rejected, causing a lamentable destruction of bees and brood."

The other engraving shows a Soria "eke," with spaces. It is easy to



notice that the bars to support the combs, in this eke, are placed a little below the side of the eke, to afford a space between two ekes or sections, *a la* Heddon.

As soon as the book of Soria was published, about 43 years ago, a friend of mine, a notary in my village, was so enthusiastic about changing, inverting, etc., of these ekes, that for two years he hived his swarms in Soria hives. But these spaces, cutting the combs horizontally, interfered with the laying of the queens, and the crop was thereby decreased.

How many times in my career of bee-keeping, have I seen such inventions praised for several years, then disappear! The Soria hive was not alone to receive such acclamations of short duration; the Debeauvoys hive was awarded medals on medals, and its inventor published six editions of his book! Where are these hives now? I dare say that, in the whole of France, it would be impossible to find even one specimen of them. I was able to appreciate their qualities and defects. The "eke hive" was easy of manipulation for the bee-keeper, but hindered the laying of the queen. The Debeauvoys was good for bees, but difficult to manipulate. Other bee-keepers of France and Germany invented vertically-divisible brood-chambers, which, praised also for years, have disappeared before the movable-comb hive.

Most of the partisans of the new Heddon hive, using, as he does, Langstroth hives, reduced to 6 or 8 frames, are unable to see whether the laying of queens is hindered by the spaces between the ekes; for, in their small Langstroth hives, the laying is even more decreased; therefore, they may answer, with full confidence, as they did in the *AMERICAN BEE JOURNAL*, on page 54, that they do not consider the bee-space an impediment to the laying capacity of a queen.

Mr. R. L. Taylor, in answer to the question on page 39, on the influence of the spaces on the number of bees, in comparison with hives having full combs, writes that one of his colonies in the new Heddon hive produced, of comb honey, five times the average of his apiary, and about twice as much as the best of his colonies in Simplicity hives, and it was because of their numbers that they did it. Of course, as the veracity of Mr. Taylor cannot be questioned, such a result struck me dumb. All my experience—all my theories on bee-culture—had to be put aside, and I had to study the principles of the new school. A hard task for a man of my age!

But I never accept what is seen at the surface without looking at the bottom of things. What did I see in this case? The Heddon hive of Mr. Taylor, containing 16 half frames, offered to the queen a surface of $16 \times 17\frac{1}{2} \times 4\frac{1}{2}$, or 1,344 square inches, while his 8-frame Simplicity had but $8 \times 16\frac{1}{2} \times 8\frac{1}{2}$, or 1,136 square inches. This difference of 208 inches, offered to the queen of the Heddon hive, about 12,000 more cells, in which she laid 12,000 more eggs every three weeks. (See Feb. 8, page 85.)

Mr. Taylor was mistaken in putting to the credit of the spaces between the ekes, that which was the result of the enlarged size. No doubt the same mistake was made by Mr. Heddon, for his new hives contain 20 half frames, or 1,780 square inches, while his Langstroth hives contain but 8 frames, or 1,136 square inches. The difference is 644 inches, or 36,000 more cells.

These facts not only are in favor of enlarging the hives, but they answer also to the new, and, to my mind, strange idea of Mr. Hutchinson, that "It does not matter if our queens are hindered in their laying, for we do not make hives simply for the convenience of the queen." (See page 54.) According to my experience the convenience of the queen is the convenience of the bee-keeper, for the more our queens lay, the more bees are in the hive for the harvest.

The crop of Mr. Taylor would have been increased, had most of his colonies been as populous as the one which

gave him this large harvest. Then it is profitable to provide our queens with the means of laying abundantly, and to feel happy. But nothing is better than a large brood-chamber to attain such a result.

Hamilton, Ills.

[Knowing that our readers were not familiar with the "ekes" and "nadirs" used in Europe, and mentioned by Mr. Dadant on page 119, we copied from the *British Bee Journal* an explanation of these terms simply for general information. Perhaps that was unnecessary, as our friend Dadant intimates—thinking that he made the matter sufficiently plain. We certainly had no intention of interfering with, or taking any part in the discussion on hand.

Quoting from the *AMERICAN BEE JOURNAL* for 1866, pages 72 and 85, Mr. Dadant says that those articles were written by "our lamented Samuel Wagner." By referring to page 9 of that same volume, it will be seen that Mr. Wagner credited those very articles to "an experienced and intelligent German"—he would not thus refer to himself.

As to the engravings in Mr. Dadant's article—the first shows the French hive of Palteau, which had fixed bars or slats, the surplus honey to be cut out of any section desired by the bee-keeper.

The second engraving represents a Soria hive which shows a principle which was used in a hive with round sections without movable frames, figured and described in Hartlib's "Reformed Commonwealth of Bees," published in London in 1655, and mentioned by us at the Indianapolis Convention in 1886. (See the report on page 663.)

Certainly neither of these, nor the "ekes" and "nadirs" described by the item we copied from the *British Bee Journal*, are the same as a complete interchangeable brood-chamber having the movable frames. Neither are those described by the "German" author on page 85 of the *AMERICAN BEE JOURNAL* for 1866—for such "ekes" required to be cut off "by means of a thin wire." Such "sections or ekes" were "without bottoms," and had "an opening six inches square in the top"—differing materially from

complete sectional brood-nests provided with frames, which are all movable and interchangeable at will!

But all this is a friendly chat on the definition of terms, having no reference to the discussion on the desirability of using large or small hives, or sectional brood-chambers. In that discussion we shall take no part. The average honey crop of our friends Dadant being over 20,000 pounds, they are abundantly qualified to argue upon the best size of hives for use, and are able to give an opinion of value to producers of honey.—Ed.]

HONEY-BOARDS.

How they Should be Made and Used.

Written for the American Bee Journal
BY J. M. SHUCK.

This honey-board consists of nine slats of clear, straight-grained white pine $\frac{1}{4}$ of an inch thick. The two outside slats are about $1\frac{1}{2}$ inches wide, and the seven inside ones are about $1\frac{1}{4}$ inches wide; they are as long as the hive that they are to cover, and the nine slats are intended to cover a brood-chamber 1 foot wide, and two side walls $\frac{1}{2}$ inches each in thickness.

These slats are held together by two pieces of heavy galvanized iron, one edge of which is folded at right angles $\frac{1}{4}$ of an inch, to cover the ends of the slats.

These honey-boards are nailed together in a cast-iron frame, bed-plate and clamp combined, so that the board may be true and properly spaced when done.

How to Nail Honey-Boards.

Lay the nine slats into the nailing frame; then lay on top of the slats the two end-pieces of galvanized iron, with the folded edge down and covering the ends of the slats; now put in the "spacers"—these are steel checks about an inch long, about $\frac{1}{4}$ of an inch wide, and 5-32 of an inch thick; they are held loosely upon a polished steel rod, so as to be handy, and not get lost; two of these rods are used, one near each end of the honey-board. After seeing that the spacers are in place, bring up the "following-bar" at the end of the board, and also the one at the side of it snug and close, and you are ready to nail.

Make holes in the galvanized iron with a prick-punch, and nail with $\frac{1}{4}$ -inch wrought tacks, or clout nails. Nail carefully, or the slats may split;

when the point of the nail has touched the cast-iron bed-plate, tap lightly three or four times, and the nail will turn back into the wood, when it may then be driven "home" without splitting. Drive two nails in each end of each slat, and a nice, light, stiff queen-excluding board, only $\frac{1}{4}$ of an inch thick, is the result. No perforated metal is needed, as the wooden one will be found to render better satisfaction in every way.

This honey-board is not on the "sink break-joint" principle. I get the bee-spaces all in the hives and supers themselves, so that when a hive or super is placed on any plain board, the bee-space prevents the wholesale slaughter of bees. This board, placed upon an 8-frame hive, with the frames accurately spaced $1\frac{1}{2}$ inches from center to center, would "break joint;" but when frames are not accurately spaced, the "break-joint" theory will in a majority of cases be at fault.

I take some pride in my honey-board, and can show some rich, dark specimens ten years old; yet, if any one wishes to improve upon it, either with or without my permission, he is welcome to do so.

Des Moines, Iowa.

SWARMING.

Do Bees Select a Home Before Swarming?—Rearing Queens.

Written for the American Bee Journal
BY J. E. POND.

I certainly do not wish to say anything that will tend to cause an unprofitable discussion, but the above question is one of some interest and importance to beginners at least, and any light given them may be of value. Whether bees ever select a home before swarming, is one that probably no one can answer, as their vagaries are such, that the facetious remark of the late Mrs. Tuttle, viz., "Bees do nothing invariably," may be taken as an axiom.

In my own experience I do not find that bees do select a new home before swarming. If they did, there would be no protection whatever, in my judgment, against leaving the new hive after being placed therein. My own belief, based on my own experience, is that as soon as the swarm settles, pioneers start out to find a new home; if they succeed in so doing they return and take the swarm with them. For this reason, I believe, that all swarms should be hived as soon as they have settled, and when this is done, I have no more trouble with their leaving the new hive.

It is true that no one can determine accurately, when a newly-hived swarm leaves the hive, whether they selected the new home before or after they swarmed; but I think that if the rule is followed, of hiving all swarms as soon as they fairly settle, but little trouble will follow.

My advice to beginners, who depend upon natural swarming is, to watch the apiary closely during the swarming season. Keep constantly prepared for issuing swarms, and hive them as soon as they have fairly settled. By so doing I believe they will find less trouble than in any other way.

Rearing Good Queens.

Much that is written in regard to good queens is misleading to the beginner. One bee-keeper writes that "good queens are only reared while the colony is under the swarming impulse;" another, "that it makes no difference whatever, whether they are reared under such an impulse or not." I am on record as urging the rearing of better queens, rather than poorer ones, and I fully believe that any method that will bring about this result is to the advantage of all.

There is no question that good queens can be reared in both ways. The evidence is full and complete that this is true. Every breeder of queens knows this, and has proved it time and time again; and for this reason I believe that we must depend upon the honesty and integrity of the breeder from whom we purchase our queens, rather than upon the matter whether he rears his queens under the swarming impulse or otherwise. All we need to do is to follow nature's law, in a natural way.

It is natural for a queenless colony to rear a new queen, and equally natural for it to do so, as to rear a queen when the swarming fever seizes the colony. This being the case, who is to say in the face of the existing state of things, that one queen will prove better than another, simply because natural laws are followed in one direction rather than in another?

My own view of the matter, based on my own experience, is this: If the queen is removed from a full colony, when honey is coming in freely, or if such is not the case, the colony is regularly fed in small quantities, equally as good queens are produced, as when the swarming impulse causes the queen production; and I have further found, that by the misnamed "artificial method" of rearing queens, there is far less risk of producing from 10 to 13 day queens, than under the swarming fever; and this for the reason that we can know positively and absolutely whether our queens are reared from

the egg, or from larvæ from 3 to 4 days old.

After all, however, the matter comes to this point: If the bee-keeper depends upon the queen-breeders for his supply of new queens, he must select those upon whose honesty and integrity he can depend.

North Attleboro, Mass.

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A. Zimmerman said that from his four years of experience he favored cellar-wintering, and that he had never lost one thus wintered. He did not think that bees wintered outside were any more healthy than those wintered in the cellars.

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Mr. Roebuck asked Mr. Zimmerman how his hives were arranged in the cellar. Mr. Zimmerman said they had a thickness of burlap over the frames, and a board on top of that, with the entrances wide open.

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"Do young bees which had no flight in the fall, winter as well as older ones?" Mr. Beatty said that it made no difference.

"Do bees eat rye flour, or make pollen of it?" Mr. Sweany said that he fed common wheat flour, and that the bees used a great deal of it.

"Is it considered favorable for drones to be found in the hives as early as April 1?" Mr. Chamberlain said that it depended upon whether there was drone-comb in the brood-nest or not. Mr. Kline said that he thought it was of no advantage, unless you wished to rear queens early. Mr. Beatty said that he had had drones flying on March 20, from strong colonies. Mr. Waits said that if a colony is strong and in good condition, drones might be seen early.

"What time would you commence to rear queens?" Mr. Beatty said, as soon as the colonies are strong enough to divide.

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I put the molds into warm water some time before using, and when they

became quite warm, I placed them over a tub of cold water to catch the wax that would run over the sides of the molds. Then I opened the molds and poured on the melted wax, and closed them. But in cold weather the molds would soon get quite cold, and the hot wax would harden as soon as it touched them; and as soon as the molds were closed, it could be again opened; but on account of the wax cooling too quickly in the molds, it would be all cracked, and the sheet would have to be again heated.

Perhaps my molds were too thick, as the sides are $\frac{1}{4}$ of an inch. Or perhaps the wax is not as it should be; but I used it as it comes from the wax-extractor into warm water to settle and cool.

I can make foundation on the molds quite as nice as that made on the mills, but it is slow work, and the molds must be neither too warm nor too cold. If I were to insert the molds into ice-water, the sheets of foundation would be so badly cracked that they could not be lifted from the molds without being torn into pieces.

Mr. Doolittle does not say that anything except water is used to prevent the wax from adhering to the molds. He must use wax at a boiling heat, or it would harden as soon as it comes in contact with the ice-cold molds, and the mold would be used more as a press than a mold. Cannot some who have been equally as successful as Mr. D., give us their way of making foundation on molds?

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The Large Hives vs. the Small Hives.

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know how it works in this immediate locality.

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The year 1886 was emphatically a swarming year in this part of the country, and I ran out of hives. In one of my out apiaries, I instructed the man in charge to procure boxes of any kind to secure the swarms, and I found, among the rest, two that were only 10½ inches square, by 8½ inches deep, or about 892 cubic inches. They appeared heavy for the size of the boxes. They were brought home in the fall, and at the usual time were placed in winter quarters with others, and wintered perfectly. The bees in them were transferred in the spring, and were prosperous colonies. Other swarms were hived in large boxes, had double the comb, and more bees, but not half as much honey. My observations reduced to words, would be about thus:

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The remaining 18 colonies are strong enough to have young bees hatching, and will not "swarm out." We of course know that bees will desert their hives for want of stores and other causes, but what is known as "swarming out" is most likely to occur with weak colonies only, and may be prevented by the use of queen-excluding entrance guards, but they should be arranged in such a manner so that the bees cannot clog the entrance in their efforts at "spring cleaning."

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CONVENTION DIRECTORY.

1888. *Time and Place of Meeting.*
 May 5.—Susquehanna County, at New Milford, Pa.
 H. M. Seeley, Sec., Harford, Pa.
 May 7.—Welland County, at Welland, Ont.
 J. F. Dunn, Sec., Ridgeway, Ont.
 May 8.—Keystone, at Scranton, Pa.
 Arthur A. Davis, Sec., Clark's Green, Pa.
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 W. H. Beach, Sec., Cortland, N. Y.
 May 19.—Nashua, at Nashua, Iowa.
 H. L. Rouse, Sec., Iowa, Iowa.
 May 22.—N. W. Ills. & S. W. Wis., at Rockton, Ills.
 D. A. Fuller, Sec., Cherry Valley, Ills.
 May 31.—Wis. Lake Shore Center, at Kiel, Wis.
 Ferd. Zastrow, Sec., Millhome, Wis.
 Aug. 3.—Ionia County, at Ionia, Mich.
 H. Smith, Sec., Ionia, Mich.
 Aug. 14.—Colorado State, at Denver, Colo.
 J. M. Clark, Sec., Denver, Colo.
 Aug. 27.—Stark County, at Canton, O.
 Mark Thomson, Sec., Canton, O.

In order to have this table complete, Secretaries are requested to forward full particulars of time and place of future meetings.—ED.

SELECTIONS FROM OUR LETTER BOX

Pollen from Skunk-Cabbage.—

G. M. Doolittle, Borodino, N. Y., on April 19, 1888, writes :

The first pollen was gathered to-day from skunk cabbage, which is our earliest pollen-producer. The mercury is at 48°, so that very few bees are flying, and when the sun goes under the clouds, these pollen-laden bees fall to the ground and stay until the sun again comes out and warms them up. One day the last of March, the mercury went up to 58°, which gave the bees a fine flight; otherwise it has not been to 50° this year.

Bees Wintered Poorly.—C. W.

Baker, Martinsville, Mo., on April 13, 1888, writes :

I began the winter with 13 colonies of bees, unprotected on the summer stands, except that I banked the snow around them when there was enough to do so. Three colonies are all that I lost, and two of them were late swarms. But almost all of the bees in this country are dead, or at least 75 per cent. of them.

Not Overstocked with Bees.—J.

V. Caldwell, Cambridge, Ills., on April 19, 1888, says :

Bees have wintered in poor condition in this part of the country, and we will not be overstocked with bees this year. The prospect for a good honey season is not promising, to say the least. White clover was nearly all killed by the drouth last season, and unless we get much rain our crop will be a failure. Last season I obtained only 40 pounds from 200 good colonies.

Method of Rearing Queens.—D.

P. Barrows, Nordhoff, Calif., on April 17, 1888, writes :

On page 252, Mr. G. Crouse asks how to rear queens. I would suggest this method, which I have used, and have seen used, with satisfaction :

Take two or three combs from an Italian colony, or as nearly pure as possible (providing the colony is strong, and the bees in

good, normal condition), well covered with bees, and containing honey, larvæ and eggs young enough to produce queens, or under four days old. Place these in a hive, partitioning it off with a division-board to a suitable size. Place this new colony on the old stand, first removing the original colony to a new location. The bees in the new hive, finding that they have no queen, will form embryos, and rear new queens.

Then two or three days before the young queens emerge, place the embryos in the queenless hives, and those needing new queens. Care must be taken to have the hive warm and tight, and the bees well provided with honey.

When all the colonies are supplied with queens, leave an embryo in the "queen-nursery," and you will thus have the queenless colonies remedied, and a new colony besides.

Many Colonies have Starved—

Thos. C. Stanley, Boyleston, Ills., on April 21, 1888, writes :

Last year 15 cases (about 300 pounds) was our crop of honey from 250 colonies, spring count. Perhaps there was a barrel or two of extracted honey, had we taken it out, but we never count it. Many bees are starved out through the country—I should say 50 per cent. I always keep a supply of honey on hand for such seasons, and consequently suffer no loss from that cause. But there is a cause from which we have lost heavily for three years.

Storing Pollen—Alsike Clover.—

J. H. Stanford, Cherokee, Iowa, on April 12, 1888, writes :

I am happy to report that my bees have survived the terrible blizzards of the past winter, and are now gathering pollen from maples and willows. My new bee-cellar, built according to Dr. Miller's instructions, has proved to be a success so far. The temperature of the cellar has not varied more than 4° this winter, and at no time above 38°. I planted six acres of Alsike clover last spring, but very little of it has come up, as it was very dry here last summer. Can any one tell about Alsike clover seed growing the second year? I know that white clover seed will lie in the ground for two or three years, and then grow. I increased my bees from 12 to 20 colonies in 1887, extracted 775 pounds of honey, and took off 50 pounds of comb honey. I sold the extracted honey for 12½ cents per pound, and the comb honey for 20 cents a pound.

Keeping Bees in Houses.—J. H.,

of Ohio, on March 6, 1888, writes thus about houses for bees :

In an article by Mrs. L. Harrison, on page 57, she says that all attempts at keeping bees in houses have been failures, with one exception, which is pronounced a success, and that is 'patented.' I do not know what kind of a house she can mean.

When I was young and at home, my father used to keep from 4 to 6 colonies in a shed (open in front only), in the old-fashioned box-hives, 14x14 inches, and 2 feet high. He kept them thus for many years, until high water once destroyed them all. After that he built a room in the garret about 6 feet square, putting the hives on a frame 18 inches from the floor, and taking a brick out of the wall for an entrance to the hive.

The hive was a three-section hive, each section 14 inches square by 10 inches deep. He would take off one or two top sections each year, and fill one or two milk pans with nice, white honey. They never

swarmed, and it was a very large colony in time. They were there for five or six years. He would go up and sweep the room out once a week. They built the comb all over the hive, and the frames to the floor, and loaded them so heavily that one day it fell to the floor in a heap, losing the bees and all. My brother built a room of the same kind two years afterward, and had the same misfortune, and lost his bees in the same way.

Where I now live the water in 1884 was 10 feet deep in my yard and garden, so it is not a very good place to keep bees in my cellar. I have had one colony in the garret for two summers, in a sectional frame hive; but it is too much labor to go up two long stairs to see them, so I shall move them down to my bee-house that I have been building for them. The room is 7½ feet wide, 20 feet long, and 7½ feet high. I do not see why they should not do well in it, as I can pack them well for winter.

Ionia Co., Mich., Convention.—

Harmon Smith, of Ionia, Mich., the Secretary of the Association, sends the following report :

The adjourned meeting of the Ionia County Bee-Keepers' Association was held in the office of Oscar Talcott, at Ionia, Mich., on April 18, 1888. It was called to order by Chairman J. H. Robertson, with Harmon Smith acting Secretary. Seventeen members reported 920 colonies put into winter quarters last fall, and a loss of only 43 of that number in wintering.

After deliberation and interchange of views on various matters, Mr. Robertson introduced a printed constitution, practically agreed upon at the March meeting, which was adopted. Copies of it may be had of the Secretary, upon paying a membership fee of 25 cents.

The following officers were elected: President, J. H. Robertson; Vice-Presidents, A. H. Gurnsey and Wm. H. Penny; Secretary, Harmon Smith; and Treasurer, Oscar Talcott.

After a profitable and pleasant exchange of views among the members, the convention adjourned to meet at Ionia, on Aug. 3, 1888, with a request to all the bee-keepers of the county and vicinity to meet with them, and bring in full reports of the summer's products, and become members of the Association.

That Ontario Convention.—Dr.

A. B. Mason, Auburndale, O., writes thus :

"O wad some power the giftie gie us
 To see ourselves as ithers see us,
 It wad frae morn a blunder free us,
 And foolish notion."

When I saw the above quotation in one of Mr. W. F. Clarke's articles in the AMERICAN BEE JOURNAL last summer, while criticising Dr. Miller's position in regard to the desirability and practicability of bee-keepers getting the control of a limited area as pasturage for bees, I thought, "O how I do wish some power would take some of the egotism out of some writers, and lead them to make Burns' words their most earnest prayer, and that it might be heard and answered." Evidently it is "possible for a man to misunderstand himself," or the above lines would not have been penned by Burns. From his writings, I have no doubt that Mr. Clarke speaks the truth when he says, "I can afford to be pooh-poohed, and I rather enjoy the fun of tormenting prejudiced unbelievers." In reading the report of the Ontario Convention (see page 72), I thought it was unusually good, and since reading Mr. Clarke's criticism, on page 104, I have re-read it, and now it seems better than it did at the first reading. If the report is a "lop-sided affair," I hope some one will give us an equally good

report of next year's meeting, and put in as many more "of the most interesting discussions" as possible. As an interested, but unbiased "spectator," I cannot see the truthfulness of the assertion made in the fifth, sixth and seventh lines of the article on page 104. The reporter did say something about making a cellar somewhat like that of J. Alpaugh's, and I believe I am glad he did. Mr. Reporter, please give us some more "lop-sided" reports. What is there bad about that "father-in-law"? He is respected and honored by the Ontario bee keepers, and was elected President of their association, and was so unfortunate as to be chosen as one of their commissioners to the Colonial, and also chairman of the commission; but he has been annoyed and badgered until life is almost a burden. What did he do at the Ontario Convention that should merit such an insinuation? He presided over the convention and delivered the "annual address," which is published in the report, and Messrs. Macolm and Hall also have essays in the report.

I gather from the few words reported, that Mr. Clarke was opposed to the use of the honey extractor at all, and if that is a correct inference, it is nothing new, for he has done the same thing before, but it did not get into the "report" to suit him.

Mr. Clarke says, "My own preference for comb honey is shared by me with some of our best and largest producers of honey, and this question is one that must come to the front." My truthfulness and "modesty" prevent my saying that I am one of the "best and largest producers of honey," and that probably accounts for my not "sharing" in that "preference."

Cold and Backward Spring.—

W. A. Hodge, Victory, Wis., on April 23, 1888, says:

I wintered 24 colonies of bees, mostly Italians, in the cellar, with a loss of only 2 colonies. They came out heavy, and seem to be all right. In 1887 I had 1,142 pounds of honey in 1½-pound sections, from 15 colonies. The spring is very cold and backward here, and the Mississippi river is very high—the highest, I believe, ever known in April.

CONVENTION NOTICES.

The next meeting of the N. W. Ills. and S. W. Wis. Bee-Keepers' Association will be held in Rockton, Ills., May 22, 1888. D. A. FULLER, Sec.

The spring meeting of the Wisconsin Lake Shore Center Bee-Keepers' Association will be held on May 31, 1888, in Mueller's Hall, at Kiel, Wis. FRED. ZASTROW, Sec.

The Cortland Union Bee-Keepers' Association will hold its spring meeting on May 8, 1888, at Cortland, N. Y., at 10 a.m. All bee-keepers are invited. W. H. BEACH, Sec.

The Keystone Bee-Keepers' Association will hold its sixth annual meeting in the Court House at Scranton, Pa., on Tuesday, May 8, 1888, at 10 a.m. All bee-keepers are invited. A. A. DAVIS, Sec.

The Hardin County Bee-Keepers' Association will meet at the Court House in Eldora, Iowa, on the second Saturday in each month, at noon (12 o'clock), until further notice. J. W. BUCHANAN, Sec.

The next meeting of the Susquehanna County Bee-Keepers' Association will be held at New Milford, Pa., on May 8, 1888. The following subjects are to be considered: Bee-keeping for pleasure and profit—Spring work with bees—is it advisable to use foundation? If so, to what extent?—How can we make our Association of the most practical value to its members. All are cordially invited to come. H. M. SEELEY, Sec.

A Pocket Dictionary will be presented for two subscribers with \$2.00. It is always useful to have a dictionary at hand to decide as to the spelling of words, and to determine their meaning.



ALFRED H. NEWMAN,
BUSINESS MANAGER.

Business Notices.

If You Live near one post-office and get your mail at another, be sure to give the address that we have on our list.

Hilton's new pamphlet on Comb Honey Production has been reduced in price to 5 cents. For sale at this office.

Give a Copy of "Honey as Food and Medicine" to every one who buys a package of honey. It will sell lots of it.

If you Lose Money by carelessly enclosing it in a letter, it is without excuse, when a Money Order, which is perfectly safe, costs but 5 cents.

Please to get your Neighbor, who keeps bees, to also take the AMERICAN BEE JOURNAL. It is now so CHEAP that no one can afford to do without it.

Preserve Your Papers for future reference. If you have no BINDER we will mail you one for 60 cents; or you can have one FREE, if you will send us 3 new yearly subscriptions for the BEE JOURNAL.

Please write American Bee Journal on the envelope when writing to this office. Several of our letters have already gone to another firm (a commission house), causing vexatious delay and trouble.

The Convention.—The pamphlet containing the report of the proceedings of the Union Convention in Chicago, is now published, and can be obtained at this office for 25 cents. Or bound up with the history of the International Society, and a full report of the Detroit and Indianapolis conventions, for 50 cents, postpaid.

Home Markets for honey can be made by judiciously distributing the pamphlets, "Honey as Food and Medicine." Such will create a demand in any locality at remunerative prices. See list on the second page of this paper.

Always Mention your Post-Office, County and State when writing to this office. No matter where you may happen to be for the hour when actually writing—never mention anything but your permanent address. To do otherwise leads to confusion, unless you desire your address changed. In that case state the old as well as the new address.

Honey and Beeswax Market.

DETROIT.

HONEY.—Best white in one-pound sections, 15c. Extracted, 9@10c. Large supply and few sales. BEESWAX.—22@24c. Apr. 24. M. H. HUNT, Bell Branch, Mich.

NEW YORK.

HONEY.—We quote: Fancy white in 1-lb. sections, 15@15c.; the same in 2-lbs., 10@11c.; buckwheat 1-lb., 10c.; 2-lbs., 8c. Market dull. BEESWAX.—24c. MCCAUL & HILBRETH BROS., 28 & 30 W. Broadway, near Duane St. Apr. 7.

CHICAGO.

HONEY.—Prices range from 16@18c. for best one-lb. sections, to 14@15c. for off color and condition; 2-lbs., 14@15c. Dark is slow of sale at almost any price. Extracted, 7@8c., with good supply. Light demand. BEESWAX.—22@23c. R. A. BURNETT, 161 South Water St. Mar. 22.

NEW YORK.

HONEY.—We quote: Fancy white 1-lb. sections, 14@15c.; fancy 2-lbs., 12c. Lower grades 14@2c. per lb. less. Buckwheat 1-lb., 10@10½c.; 2-lbs., 9@9½c. Extracted, white, 7@7½c.; dark, 6@6½c. Mar. 19. F. G. STROHMEYER & CO., 122 Water St.

CHICAGO.

HONEY.—We quote: Fancy white clover 1-lb., 16@17c.; 2-lbs., 15@16c. Dark is slow sale at almost any price. Extracted is scarce, and sells at 7@10c. BEESWAX.—23c. S. T. FISH & CO., 129 S. Water St. Mar. 19.

CINCINNATI.

HONEY.—We quote extracted at 4@5c. per lb., for which demand is good. Comb honey, 14@17c.—Demand slow. BEESWAX.—Demand is good—20@22c. per lb. for good to choice yellow, on arrival. Apr. 23. C. F. MUTH & SON, Freeman & Central Av.

MILWAUKEE.

HONEY.—Choice white one-lb. sections, 16@17c.; 2-lbs., 15@16c.; 2-lbs., 14c. Extracted, white in kegs and ½-barrels, 8 to 9½c.; in tin and pails, 9½@10c.; dark in barrels and kegs, 5@7c. Market fair. BEESWAX.—22@25c. A. V. BISHOP, 142 W. Water St. Apr. 23.

DENVER.

HONEY.—Best white 1-lb. sections, 17@18c.; 2-lb. sections, 15@17c. Extracted, 7@10c. BEESWAX.—20@23c. J. M. CLARK & CO., 1400 Fifteenth St. Mar. 1.

KANSAS CITY.

HONEY.—We quote: Choice white 2-lb. sections, 17@18c.; dark 2-lbs., 14@15c.; choice white 1-lb., 18 to 20 cts.; dark 1-lb., 15@16c. White extracted, 7@8c.; dark, 6@6c. Demand is slow. White extracted is firm when in 60-lb. tin cans. BEESWAX.—21 to 22c. HAMBLIN & BEARSS, 514 Walnut St. Mar. 20.

BOSTON.

HONEY.—We quote: 1-lb. sections, 16@17c.; 2-lb. sections, 14@15c. Extracted, 6@8c. The market is not very brisk and sales are slow. BEESWAX.—25 cts. per lb. BLAKE & RIPLEY, 57 Chatham Street. Mar. 24.

SAN FRANCISCO.

HONEY.—We quote: White to extra, 10@17c.; amber, 9@14c. Extracted, white liquid, 7@7½c.; amber and candied, 6@7c. Market quiet. BEESWAX.—18@21c. Mar. 20. SCHACHT & LEMCKE, 123-124 Davis St.

KANSAS CITY.

HONEY.—We quote: White 1-lb., glassed, 16@17c.; unglazed, 17@18c.; and dark 1-lb., glassed, 15c.; unglazed, 16c.; white 2-lb., glassed, 16c.; unglazed 2-lb., 17c. California white 2-lb., 17c. California extracted in 60-lb. cans, 8c. Market quiet and receipts are larger. BEESWAX.—No. 1, 20c.; No. 2, 18c. Mar. 19. CLEMONS, CLOON & CO., cor 4th & Walnut.

Clover Seeds.—We are selling Alsike Clover Seed at the following prices: \$8.00 per bushel; \$2.25 per peck; 25 cents per lb. White Clover Seed: \$10.00 per bushel; \$2.75 per peck; 30 cents per lb. Sweet, or Melilot, Clover Seed: \$6.00 per bushel; \$1.75 per peck; 20 cents per lb.—by express or freight.

Yucca Brushes, for removing bees from the combs, are a soft, vegetable fiber, and do not irritate the bees. We supply them at 5 cents each, or 50 cents a dozen; if sent by mail, add 1 cent each for postage.

Advertisements.

BEES FOR SALE.

DANIEL WHITMER,
17D2t P. O. Box 485, SOUTH BEND, IND.
Mention the American Bee Journal.

35 COLONIES of BEES

In good condition. For particulars, address,
P. O. BOX 40,
17A2t BELLEVUE, NEBR.
Mention the American Bee Journal.

APIARY OF 130 COLONIES

—mostly Italian—BEES to let on shares, or will sell.
Address, **G. C. SODEN,**
18A1t CANANDAIGUA, Ont. Co., N. Y.
Mention the American Bee Journal.

200 POUNDS of BEES

At \$1.00 per lb. Italian Queens, \$1.00 each. Circular free. **S. C. PERRY,**
18A9t PORTLAND, Ionia Co., MICH.
Mention the American Bee Journal.

ITALIAN BEES.

I WILL sell 3-frame Nuclet, with full-sized frames and Tested Queens, at \$3.00 each. Full Colonies at \$5.00 each. Address,
Rev. J. E. Kearns, Rockville, Ind.
Mention the American Bee Journal.

ITALIANS on Langstroth frames—2-frame Nucleus (no Queen), \$1.25; 3-frame, \$1.75. Bees per lb. 65c. Tested Queen, \$2; Untested, \$1.00. Also **Dew-Berry Plants** which I will sell for 50c. per doz. Every plant warranted to live, or I will replace them.

15A4t **H. L. Pangborn, Maquoketa, Iowa.**
Mention the American Bee Journal.

BEE-KEEPERS' Supplies, Queens, Nuclet, High-Grade Poultry, Small Fruit Plants, etc. Send for Catalogue. **A. WOETMAN,**
14C3t SEAFIELD, White Co., INDIANA.

HOW TO RAISE COMB HONEY,

PAMPHLET full of new and improved methods; Price, 5 one-cent stamps. You need also my list of **Italian Queens, Bees** by the lb., and Supplies. **OLIVER FOSTER,**
13A1t Mt. Vernon, Linn Co., Iowa.

Dadants' Foundation Factory, wholesale and retail. See advertisement in another column.



SURE to send for our Circular before buying. Italian Bees by the lb., 2 or 3 fr. Nuclet Queens, Foundation, &c. Unt'd Queens in May, \$1; in June, 75c.; 6 for \$4.
Jno. Nebel & Son, High Hill, Mo.
14A1t

Mention the American Bee Journal.

Send 75 Cents for my New Book—"A Year among the Bees;" 114 pages, cloth bound. Address,
DR. C. C. MILLER,
30A1t MARENGO, ILLS.

My 20th Annual Price-List of Italian, Cyprian and Holy-land Bees, Queens and Nuclet Colonies (a specialty); also Supplies—will be sent to all who send their names and addresses.
H. H. BROWN,
18C3t LIGHT STREET, Columbia Co., PA.
Mention the American Bee Journal.

Western BEE-KEEPERS' Supply Factory.



We manufacture Bee-Keepers' supplies of all kinds, best quality at lowest prices. Hives, Sections, Foundation, Extractors, Smokers, Crates, Vests, Feeders, Clover Seeds, Buckwheat, etc. Imported Italian Queens, Queens and Bees. Sample Copy of our Bee Journal, "The Western Bee-Keeper," and latest Catalogue mailed Free to Bee-Keepers. Address
JOSEPH NYSEWANDER,
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Muth's Honey Extractor,

Perfection Cold-Blast Smokers, SQUARE GLASS HONEY-JARS, etc.

For Circulars, apply to
CHARLES F. MUTH & SON,
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P. S.—Send 10c. for Practical Hints to Bee-Keepers.
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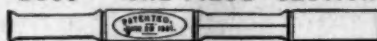
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Is published every week, at 10s. 10d. per annum. It contains the very best practical information for the apiarist. It is edited by Thomas Wm. Cowan, F.G.S., F.R.M.S., etc., and published by John Huckle, King's Langley, Herts, England.

Mention the American Bee Journal.

J. FORNCROOK & CO.,

MANUFACTURERS OF THE

"BOSS" ONE-PIECE SECTIONS,



Patented June 28, 1881.

Will furnish you, the coming season, ONE PIECE SECTIONS as cheap as the cheapest. Write for prices.
Watertown, Wis., Jan. 1, 1888.

Mention the American Bee Journal.

Dadants' Foundation Factory, wholesale and retail. See advertisement in another column.

J. C. SAYLES,

MANUFACTURER of and Dealer in Apian Supplies. Also Pure Bred ITALIAN QUEENS and BEES.

Catalogue free. Send name and address.

13A1t Hartford, Wisconsin.

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MINNESOTA AHEAD!

WE are selling 100 All-Wood Langstroth Brood-Frames for \$1.00; and Langstroth HIVES, with Supers, for 55 cts. Don't order your Supplies for 1888 until you see our Circular.

WM. H. BRIGHT,

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2-Story Langstroth Hive, 80c.

WE still have a few of those Two-Story Langstroth HIVES with 10 Brood-Frames, at 80 cents.

Who wants them? Speak QUICK, or it will be too late. Address,

SMITH & SMITH,

10E1t KENTON, Hardin Co., OHIO.

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The Bee-Keepers' Review

IF ever a bee-paper was started with a place ready and waiting for it, the REVIEW has had that luck. The first number was welcomed before it was read, and when it was read, it took its place easily and at once among the things that justify their own existence, and need no probation before being fully and finally accepted. It is an imitation of none of its cotemporaries, and it is on a level with the best of them, both in the merit of its general scheme, and in typographical neatness. This, we believe, will be the verdict of the intelligent bee-keeping public, and, as proof of the correctness of this belief, we append the following, which we select from a large number of similar congratulations:

I am greatly pleased with the REVIEW, and think it very creditable. It must take the lead with intelligent bee-keepers.—**R. L. TAYLOR, Lapeer, Mich.**
You have made an excellent start; and I am very favorably impressed with your plan of making each issue a "special number."—**E. M. HATHURST, Kansas City, Mo.**

From a practical standpoint you are well qualified to make the venture a success. I hope you may do well financially, and establish an enviable reputation for editorial ability, as you have already as a writer on apicultural topics.—**EUGENE SMOCK, Forest City, Iowa.**

REVIEW No. 1 lies before me, and I must say it is like a chestnut—brimful of meat, properly cooked, and served in first-class palatable order. Before reading it I thought, "What can friend Hutchinson say that has not already been said by others?" But you have given us a feast of fat things. If the REVIEW keeps up to the standard of No. 1, it has a bright future before it.—**W. E. CLARK, Oriskany, N. Y.**

I like the REVIEW in every respect. There is more in it than in any other bee-paper I have ever seen; that is, more real meat, or what is called meat, as I see it. The whole matter, including advertisements, is tastefully arranged. I cannot conceive who would not instantly subscribe, at the price, after seeing a copy.—**JAMES HEDDON, Dowagiac, Mich.**

I congratulate you upon the excellence of the REVIEW. It will be an honor to the craft, and to our State, if you maintain it at the starting pitch—and I do not doubt but you will. At first I was sorry. What we want is fewer, better papers. But I forgot for the moment who was at the helm. I believe you will succeed, and if you do not go to the top, you will stride well up.—**A. J. COOK, Agricultural College, Mich.**

A sample copy of the REVIEW is at hand, and I was agreeably surprised, to say the least. As a rule, periodicals in starting furnish at first a sickly, discouraging appearance that stamps failure all over them. What a contrast in beholding the REVIEW! Why, friend Hutchinson, the first glance at it shows its success. And then its contents—the very cream of advanced bee-literature. I read it through before laying it out of my hand.—**E. KRETCHMER, Coburg, Iowa.**

Four numbers of the REVIEW have been issued. The January number discusses "Disturbing Bees in Winter;" the February issue is devoted to "Temperature," as applied to bee-repositories; the March number takes up the subject of "Planting for Honey;" while "Spring Management" is the special topic of the April issue. The special subject of the May REVIEW will be "Hiving Bees."

Besides these special discussions, which are carried on by the best bee-keepers of the country, there are several pages in each issue devoted to short, sharp, concise editorials upon current apicultural topics. An exhaustive review of Mr. Cheshire's book, "Bees and Bee-keeping, Vol. II," is begun in the March REVIEW, and will be finished in the May number. If you wish for the cream of this great work, read these three numbers.

Price of the REVIEW is 50 cents a year. Samples cheerfully sent upon application.

The Production of Comb Honey,

A neat little Book of 45 pages, price 25 cents. The REVIEW and this book for 65 cents. Stamps taken, either U. S. or Canadian.

Address, **W. Z. HUTCHINSON,**

18A1t 613 Wood St., FLINT, MICHIGAN.

Mention the American Bee Journal.

1888. Italian Queens. 1888.

SELECT Tested Queens, in May, \$2.50; in June, \$2.00; after June, \$1.50.

Queens Warranted Purely Mated, \$1; 6 for \$5.00. See page 174, March 14th Number of the "American Bee Journal."

Address, **J. T. WILSON,**

18A5t NICHOLASVILLE, Jessamine Co., KY.

Mention the American Bee Journal.